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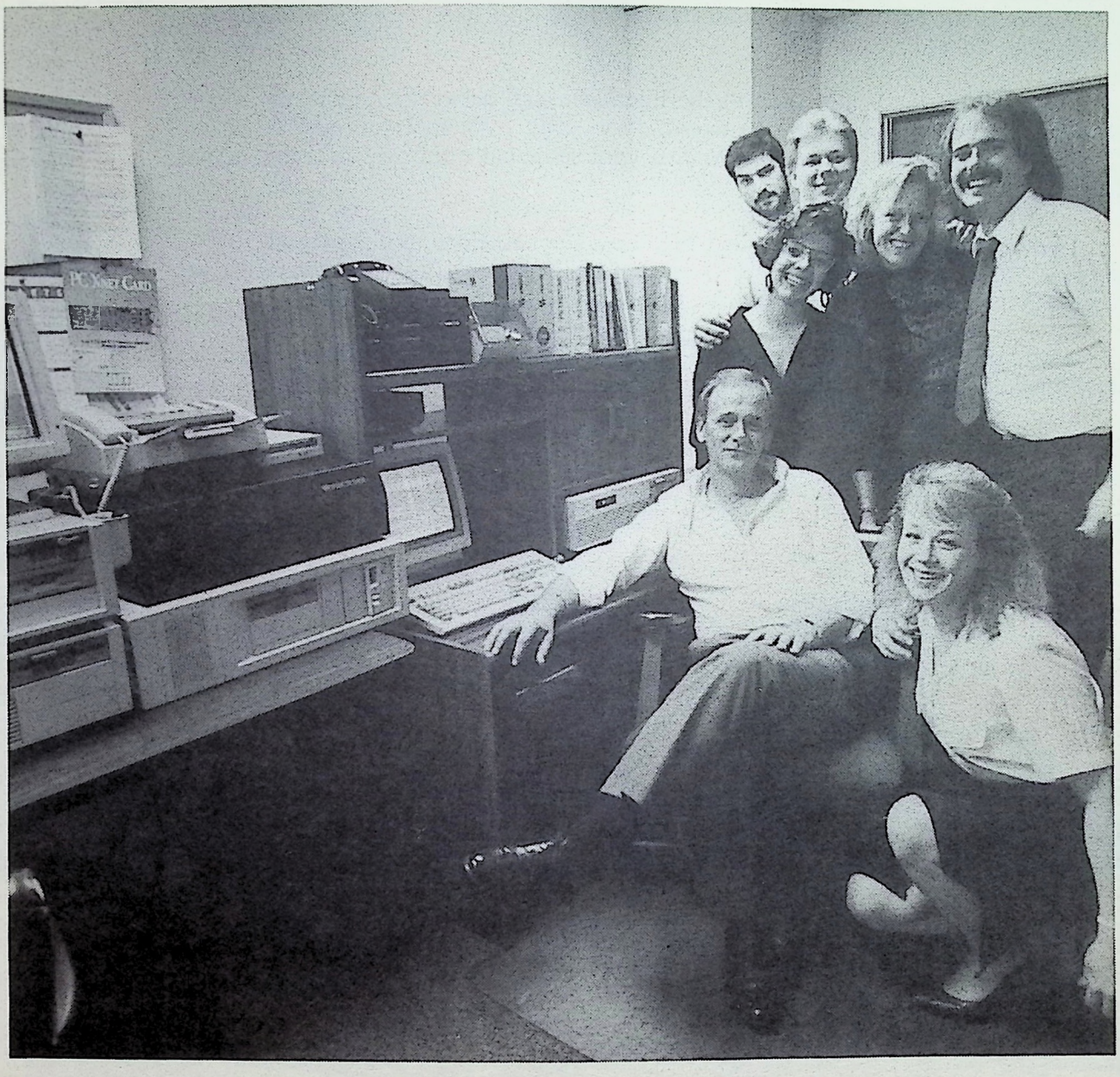

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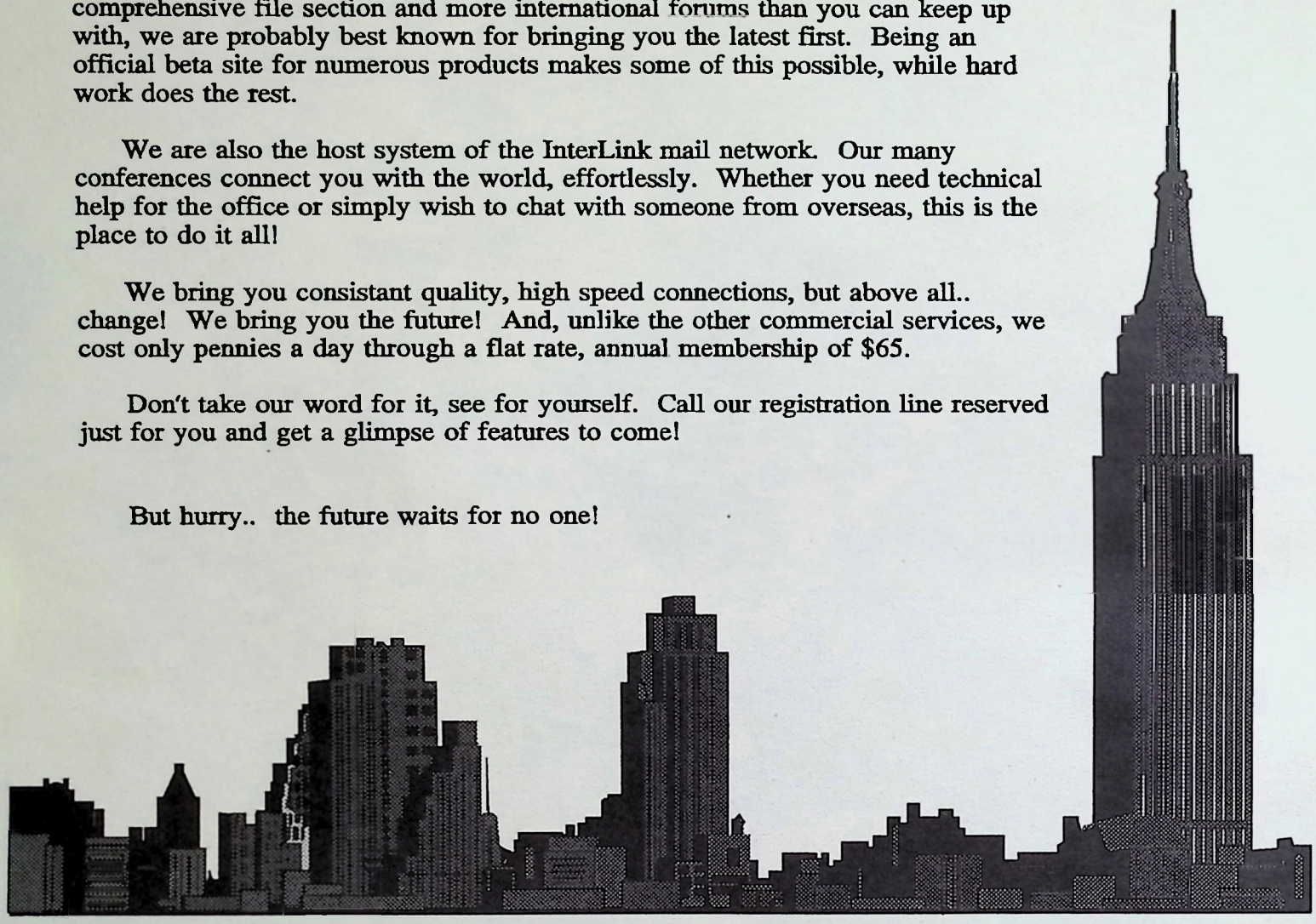

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EDITOR'S NOTES

The Legal Game for System Operators.

The city of Colorado Springs has been wrestling with the BBS question rather strenuously of late. It seems they spent some **$23,000** to set up a small TBBS system two years ago. The way it's structured is frankly pathetic as these things go. Essentially, it serves as a communications forum for the nine city councilmen. There is a public area you can dial into at **(719)578-7097** to access a single message area announcing various city events, functions and programs. You can't leave a message but you can view these bulletins in message form by logging on as **PUBLIC PUBLIC** with the password **PUBLIC**.

There are no discussion areas where outside callers can leave messages although they can read them. But "behind the wall", there is an open message area for city staff to broadcast messages to members of the council and for council members to make announcements as well. Additionally, a separate private e-mail function is provided where councilmen can send private e-mail messages to each other one-on-one. There was some concern that a participative conference for the councilmen would be a violation of the state sunshine laws. So this area is clearly marked private and all messages from one councilman to another are marked private right on the screen. In this way, councilmen are prevented from caucusing and perhaps violating the sunshine law. There is really no way for more than two of them to meet privately on the system at one time.

Mayor Robert Isaac has never announced any great love for the BBS system and he personally does not use it directly himself. But he has derived some substantial benefit from it over the past 16 months. It seems that he had the system administrator provide him with a printout of all the messages on the system. Not only all the public announcements and open area discussion, but all the private e-mail on the system as well. He essentially had a direct wire to every discussion on the system. And until recently, none of the councilmen knew he was listening in.

So for nearly a year and a half, the councilmen quite rightly assumed the private e-mail function was a private communications medium - much like talking to each other via telephone - enjoying all the rights to privacy guaranteed by law to users of the telephone system.

Well actually they it does. Under the Electronic Communication Privacy Act of 1986, it is a federal misdemeanor for the operator of any type of publicly accessible online service to disclose the contents of a private e-mail message to anyone without a legal request from a law enforcement agency under proper court authority, or where in the course of monitoring the system, they encounter a suspected violation of law and report it to a law enforcement agency.

We have to conjecture from the surreptitious nature of the operation, that the mayor and secretary knew that monitoring private conversations had some ethical problems. But the Colorado Springs case brings to light that many people don't know that it is illegal. In fact, it would appear the city attorney for Colorado Springs still doesn't know it was illegal.

Under the Communications Act, only private e-mail messages are protected. Information in public conferences is not. And so apparently the city attorney determined that despite the fact that the messages and menu selections were clearly marked private, there was in fact no private areas and so of course no violation.

So, the several members of the Colorado Springs press responded that if it wasn't private, they would like a printout as well. The city did provide them with a printout of all the public announcements, but omitted the council e-mail in question because it wasn't to be made public. So either it was not public but also not private, or the city has decided it was private after all.

The imbroglio has taken on all the aspects of a usual city hall cat fight. Policy manuals are held up and quoted and then the veracity of the manuals is questioned and all is well with city politics.

But recently, the national press picked up on the story. On May 4, the New York Times did an excellent story on the mess and the San Francisco Chronicle picked it up shortly thereafter. The consensus of a number of cited legal authorities, including a legal aid to the Congressional Committee that drafted the bill, seems to indicate that the mayor, in addition to engaging in some rather dubious ethical activities, did most probably break the law.

I'm not too concerned about Mayor Isaac other than I'm afraid his response will be that cities who don't want legal problems should avoid BBS systems - a short sighted and self-serving position I sincerely hope he avoids. And I'm not too personally concerned with the Communications Act of 1986. It seems perfectly plausible and desirable to me to have private e-mail available on our system as a convenience to our callers. And it would never occur to me to divulge the contents of a message from one caller to another to anyone else, even a law enforcement authority. And while it would be very easy to do so of course as operator, I have plenty to keep me busy without snooping about in others mail to satisfy my own voyeuristic curiosity. I don't need a law to tell me this is wrong.

But I am alarmed that so few seem aware of it. A long-time experienced Colorado sysop who is actually involved in a weekly radio broadcast on the subject of computers was interviewed by a local television station about the case and disclaimed that there was any violation at all. We have to believe the man never completely saw the system in operation at all.

We've looked at the law as written and it tends to refer back and forth quite a bit. But it is not particularly confused and the intent is clear. If you operate a system that is in any way usable by the public, and if you have message areas that any reasonably prudent person might believe to allow private messaging, you shouldn't pass on the contents of those messages to unintended third parties.

There is little or no actual case precedent to define more specifically how this applies. There was one case of an Indiana system operator who gleefully published the contents of a message from one young lady caller to a young gentleman. We understand an action was filed against the operator. But after depositions on both sides, from what we understand the system operator shut down his system and declared personal bankruptcy. The suit was subsequently dropped. While it didn't make it to court, we are fairly confident the outcome was not what the sysop was seeking in publishing the message.

We would offer the following guidelines for the purposes of discussion.

Are you a public system? Generally, we would urge you to consider yourself so as it applies to your status under the communications privacy act. Undoubtedly a number of corporate operators will take exception to this, but they have to weigh whether their legal departments are adequate to handle the test in court. Whether employees of the company are public or private users is not nearly so clear as most company men would like to believe. It depends on how it is used, for what purpose, and what the users impression of what their status is. It would be safest to assume that in a courtroom full of people who don't really know what you are talking about, if you can be dialed by telephone you stand a good chance of being assumed "public" in a legal sense.

Do you offer private e-mail? Private e-mail/messaging is almost inherent to the function of bulletin board systems. So is public conferencing. For most operations, it would be difficult to operate without both. If you want to send an individual message to a caller without all other callers seeing it you are using private e-mail. If the caller can reply, he has adequate reason to believe that will also be private.

We've seen systems with as many as four screens of legal disclaimer warning the user that there is no private e-mail on the system. The first menu then lists private e-mail as the second entry. This is something most system operators simply do not understand about our legal system. Disclaimers are NO real protection at law. They rarely hurt you in a legal sense and they can in some cases help, but very few suits are dismissed because of printed warnings, legal disclaimers, or signed waivers. When push comes to shove, if printouts of your screens are shown in court and any reasonably prudent individual could assume their message will be private - you are offering private e-mail.

We don't even bother with the legal disclaimers but it is often a good policy and just plain courtesy to inform all new callers, who may not be accomplished to online conventions, that even private e-mail can and often will be read by the operator during routine maintenance functions. This is not so much a warning as just a courtesy to explain to the uninitiated how things work.

Disclosing messages. Messages from one party to another are widely regarded as belonging to both. If one caller sends a message to another caller and THEY disclose it to the world there is no violation of anything. The recipient can disclose anything he likes whether or not he has permission of the sender. Likewise the sender can send copies to every living being in the northern hemisphere with impunity.

What if one of your callers sends YOU, the operator, a message? A gray area. But err on the side of caution. If they are asking if you know how to set the initialization string on a Multitech modem and you don't know, you're probably going to be alright asking anyone in the modem conference if they can lend a hand on this problem. You do have some rights to the message. On the other hand, some callers view system operators as confessionals. If you don't know whether the babe should have an abortion or not, just tell her that and forget it - don't pass it on.

Put yourself in the sender's place. If there is anything in the message that could be embarrassing, personal, proprietary, or clearly of a one-to-one nature, no matter where it is, keep it utterly confidential. This is basic golden rule stuff.

What About "Private" Conferences. Let's say you have a closed conference for homosexual pipe fitters to discuss tobacco preferences. True, this is not the one-to-one e-mail specified under the act. There are multiple pipe fitters all reading all of the messages. Does the law apply?

If these individuals do not want it known outside this group that they are pipe fitters or that they prefer John Rolfe's Peach Brandy pipe tobacco, you should in all cases honor that. They may work for American Tobacco and be fired if it came to light they enjoy an occasional tamp of Rolfe's in the evening. If you go into a courtroom and the fitter can produce any documentation showing why he thought he was in a privileged, closed environment, those deciding the matter are going to lend a

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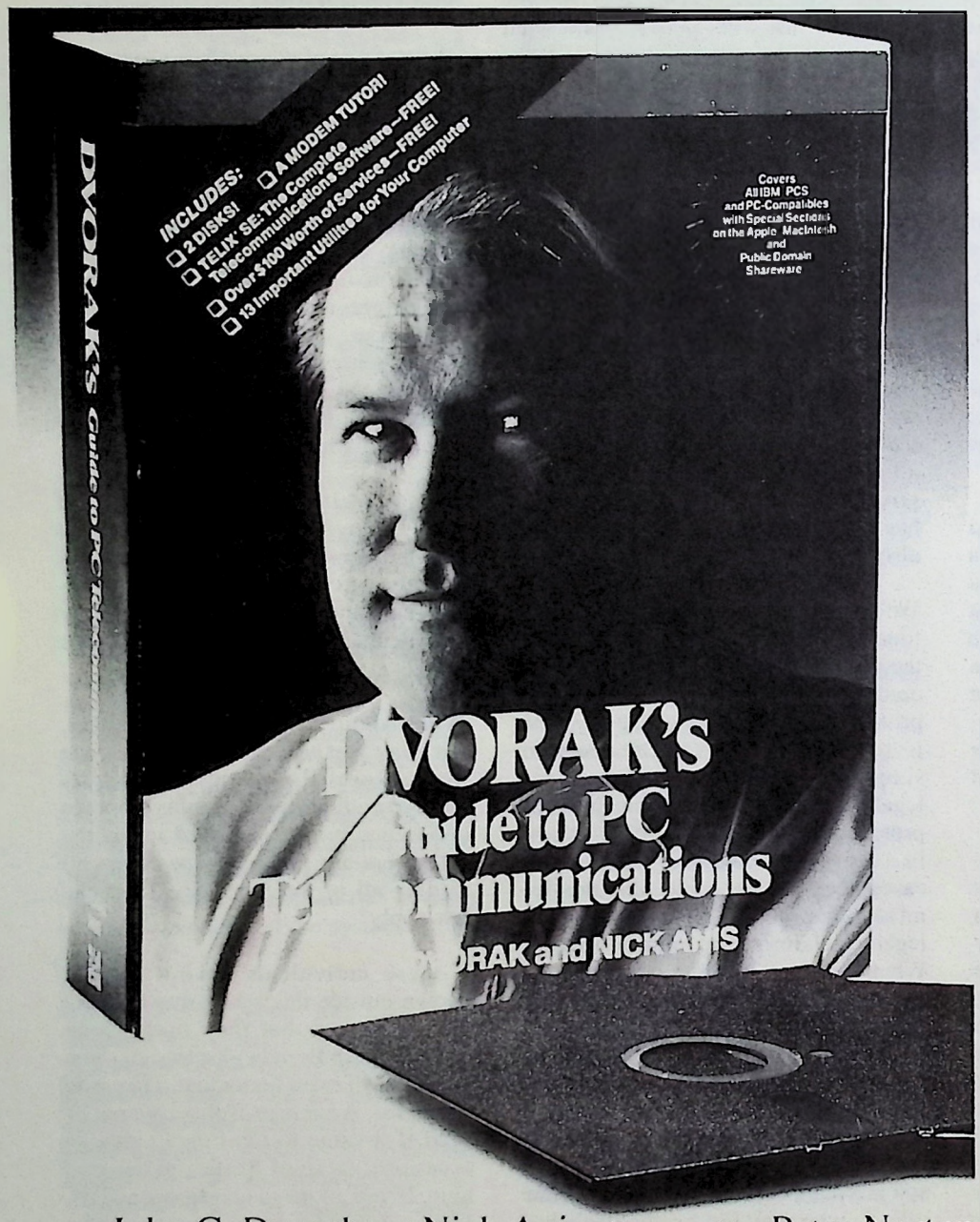

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sympathetic ear. And you're going to be in an embarrassing and perhaps costly position regardless of how you personally interpret the jots and tittles in the law. There will be on the one hand an injured party who is making a case for deception and you on the other hand quoting chapter and verse as to how the law doesn't really apply technically to this case. How would YOU decide such a matter it if it were truly a gray area?

If one of the other conference participants tells tales out of school, there is little you can do about it and I wouldn't think you, as operator, could legally be held responsible for the actions of others over whom you have no control. But avoid doing it yourself at all costs.

Handling Illegal Activity. What do you do if you discover messages on your system discussing illegal activities? Under the act you CAN disclose messages you have reason to believe are illegal to law enforcement authorities. And in some cases you may be forced to if a request is issued by a competent court authority. The problem you face as an operator is that your machine serves as a potential evidence gathering device for law enforcement. You are not really under any obligation to act as the eyes and the ears of the law. On the other hand, your other callers are not going to understand why you are down if your system is seized for evidence.

Even in cooperating with law enforcement there is the danger that your hardware will get caught up in the system. Recently, law enforcement authorities virtually entrapped a man into a conspiracy to sexually abuse young boys and murder them for the purposes of making a film. The police didn't own the machine. The criminal didn't own the machine. So how come the operator had to jump through hoops for evidenciary purposes? The man was tried and convicted. The sysop wasn't ever charged or suspected of any wrongdoing, but he paid a penalty too.

If you fancy a career as super spy or detective Columbo, you can notify the authorities, engage in an undercover sting operation, and sit proudly in court a few feet away as YOUR computer is used to bring the bastard to justice. While basking in the warm glow of knowing you've done your civic duty, note that you will very likely be offline at the time.

You probably should at least casually monitor message traffic. If you see credit card numbers being passed, telephone access codes, copyrighted software, or plans for crime under discussion on your system, simply notify all parties involved that they are no longer welcome on the system, delete all the offending messages immediately, delete their user accounts, and demand in the strongest terms that they go away forever. The telephone company is never shut down for conspiracies occurring on their equipment but unfortunately you can be if they occur on yours. This is no plot against operators, it's the nature of the equipment to record and it almost accidentally becomes an evidence gathering machine. It is also the nature of the equipment that you can erase everything and go on about your business.

It may well be that the city of Colorado Springs has opened a subject that should be discussed a little more widely. While all the councilmen knew they had been pretty much had, no one in the city government, including the city attorney realized, that a possible breach of federal law had occurred until a local system operator mentioned it. And even from at least one area BBS system operator who claims some expertise in the area, there was some rather obvious confusion. The Electronic Communications Privacy Act was a reasonably well designed instrument intended specifically to extend the wiretap laws protecting our privacy to the newer electronic technologies. Everyone entering a private message on any service should be able to do so with some assurance that their private correspondence will remain just that. And if common sense, ethics, and basic courtesy doesn't assure it, it is appropriate that legislation does.

It may be well to keep in mind whenever setting any policies, procedures, or making any decisions concerning your system that once you enter the legal system, your fate is in the hands of people who largely have little concept of what you are talking about. Most assuredly they will not be familiar with the various debates about the finer points of chat protocol and manners, conferencing mores, or the problems of flames, twits, and handles. Step back occasionally and try to picture what it would be like to present the situation to a roomful of people who have never been on a BBS system in their life. At some point, you may have to. The bottom line is to use a little common sense. But as Mark Twain said, there is nothing so uncommon....

Jack Rickard

TELEBITS

US ROBOTICS V.42bis UPGRADE AVAILABLE

U.S. Robotics has made some impressive inroads in the BBS community over the past two years with their sysop discount program. Essentially, US Robotics modems are available at a 50% discount to sysops. Their original HST modem was one of the first reliable proprietary 9600 bps units available and currently, if you want to connect at 9600 bps in the BBS world, most use the U.S. Robotics modems.

The current model of interest is the US. Robotics HST Dual Standard. Available to system operators at $699, this model supports CCITT V.32 9600 bps connections with a wide range of V.32 modems made by other vendors. Additionally, it offers a proprietary 14,400 bps HST connection.

The company announced a V.42bis upgrade at the fall COMDEX last November. V.42bis offers superb error correction and data compression features that can triple the effective throughput of text files and uncompressed programs and slightly increase input even on archived software. There were two glitches to the upgrade: it required you to send in the modem for some key parts replacements and it never did actually become available.

For system operators, the former posed more of a problem than the latter. For many, it's just not practical to take a Dual Standard modem offline, send it in to the company, and wait days or weeks

for it to return. The only option was to buy another Dual Standard, and use it as a replacement while you cycled your existing modems through the system one at a time. This would be an expensive and time consuming upgrade. The fact that it simply wasn't available as yet eased the situation somewhat.

In all fairness, the delays were not entirely U.S. Robotic's fault. And there has been quite a little game going on here with the V.42bis technology. Essentially, British Telecom persuaded CCITT to adopt their compression scheme for use in the V.42bis recommendation by making immediate licenses available to modem manufacturers for **$4000** - essentially a token fee as these things go. The problem was that British Telecom's technology was in turn founded on developments owned by IBM and UNISYS. Once the recommendation was cast, they stepped forward to claim their share. The result? IBM and UNISYS each require **$20,000** license fees and British Telecom upped theirs as well. The total license fee to incorporate V.42bis is now **$55,000.** Meanwhile, dozens of modem vendors have been left in the lurch awaiting the outcome of all this. Almost everyone has announced V.42bis products and upgrades. Almost no one has actually shipped any.

In any event, U.S. Robotics now plans to ship V.42bis upgrades during the first week in June. Better, during the ensuing delays, they've figured out a way to do field upgrades by swapping a chip and using an existing on board jumper - thus avoiding any additional parts swaps. So owners of existing Dual Standard and HST modems will be able to upgrade their products for **$50** by simply swapping a ROM chip and setting a jumper. Contact technical support at **(800)982-5151.** U.S. Robotics also operates a bulletin board for sysops to order modems online at **(708)982-5092.** U.S. Robotics, Inc., 8100 North McCormick Blvd., Skokie, IL 60076. Voice: **(800)342-5877.**

MOTOROLA TESTING ISDN CHIP

Motorola's MOS Digitial-Analog Integrated Circuit Division is currently testing a new basic rate **ISDN** transceiver chip designated the **MC145472** at Bell Communications Research. The new chip will allow hardware manufacturers to easily incorporate the Integrated Services Digital Network **(ISDN) CCITT 2B1Q U** interface standard in future products with assurance that they will work with both the Northern Telecom and AT&T central office switches. The transceiver chip offers all the circuitry to connect a desktop computer or telephone to the basic rate ISDN system and may very well become the heart of a new generation of telephones.. Northern Telecom has already announced plans to use the chip in their ISDN Basic Rate telephones and Central Office switches. Motorola Semiconductor Sales, 11120 Metric Boulevard, Austin, TX ;**(512)873-2000.**

HAYES SELLOUT?

There may be more to April 2 massacre at Hayes than first meets the eye. The leading modem manufacturer cut more than 1/4 of their work force.

The first hint of difficulty came with the resignation of Hayes VP of Sales and their Chief Financial Officer. The following week 150 Hayes employees were met at the door by security employees who took their ID badges and held a debriefing reminding them of their non-disclosure responsibilities. They were then directed to a local out placement assistance office.

According to inside sources, many of the cut staff were extraordinarily devoted to their jobs. According to some inside sources, professionals were breaking down in tears all over the halls. No one had any inkling of the falling ax and some simply responded with disbelief - protesting that they couldn't be cut - they still had work to do on their projects.

All but 9 of 27 technical support personnel were cut and the customer service department was cut from 7 reps to 2. The ISDN project, essentially the heart of Hayes future, was wiped out completely. The company claims some ISDN work will go on in San Francisco but the Norcross operation is gone. Middle management in the company was virtually wiped out with entire departments now running under the direction of what were previously first line supervisors.

Several rumors were making the rounds among employees. The strongest involves a sellout of the privately held company to AT&T, who is reportedly interested in Hayes' ISDN project.

The other rumor involves sell off of all but Hayes low-end personal modem series, which will be moved to Hong Kong. Dennis Hayes' wife is Chinese and apparently the couple purchased a home site in Hong Kong over Christmas.

Hayes, along with most modem vendors, has suffered declining revenues in the face of increasing sales. The modem market has grown increasingly price competitive over the past year or so. It may be that founder Dennis Hayes has decided to cash out now while the cashing is good.

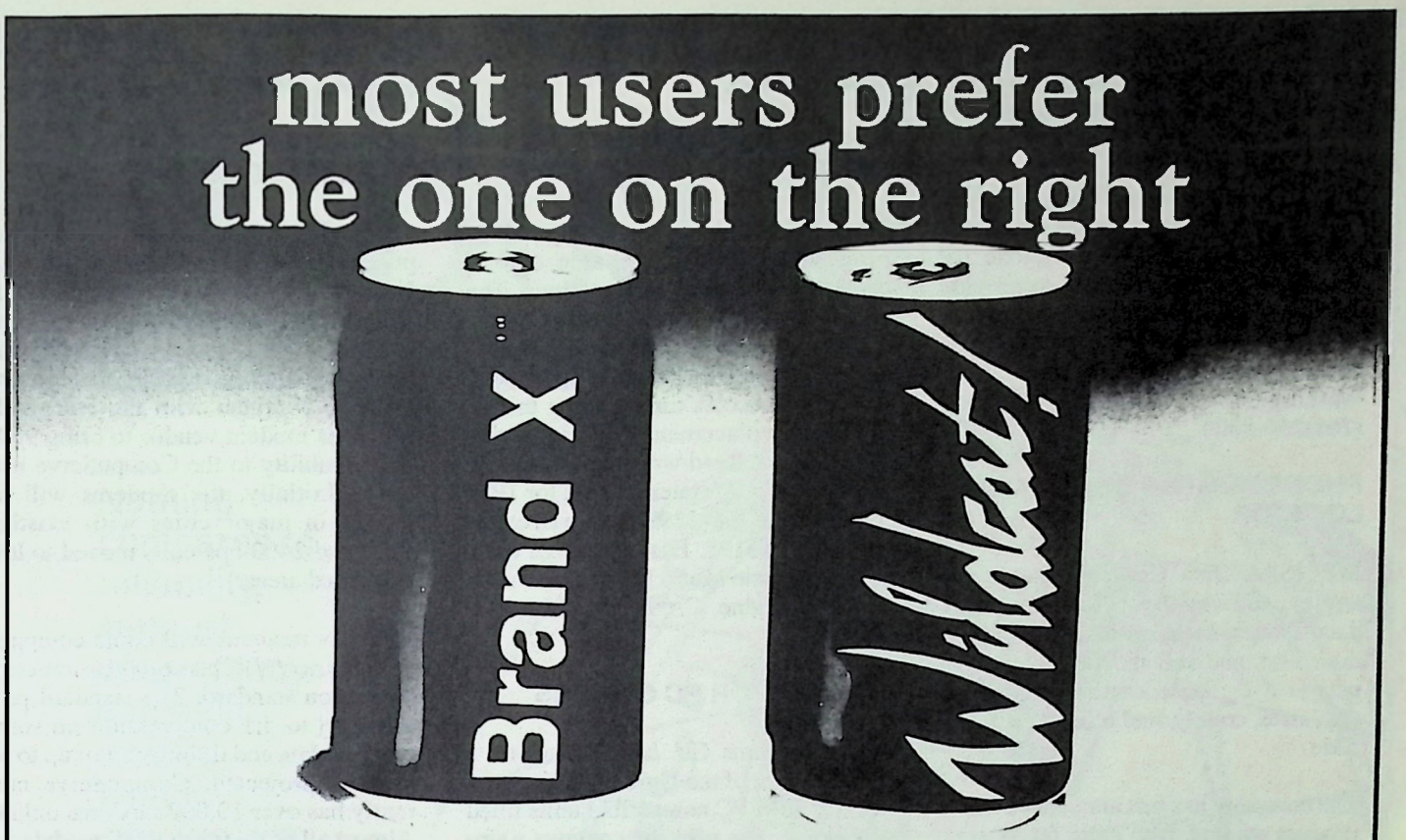
The Sound of Music BBS in New York **(516)536-8723** has set up a RESUME conference to act as a clearing house for anyone interested in discussing employment opportunities with Hayes people affected by the cut.

On the good news side, it looks like the Hayes **Ultra V.32 9600** modem will finally start shipping late in May with widespread availability by the middle of June. Apparently, the engineering group is genuinely excited about this new product. Hayes Microcomputer Products, Inc., 705 Westech Drive, Norcross, GA 30092; **(404)449-8791**

MAXTOR ACQUIRES MINISCRIBE - ANNOUNCES 1.67 GB HARD DRIVE

Hard disk manufacturer Maxtor Corporation acquired the assets of bankrupt Miniscribe Corporation in April for a reported **$46** million dollars. Miniscribe has flirted with bankruptcy for several years and after being charged with accounting discrepancies bordering on the criminal, the company had little chance of recovery and a bevy of shareholder lawsuits to contend with. The Miniscribe name and current models will likely continue as a Maxtor subsidiary.

Maxtor has also announced the largest capacity **5 1/4**-inch hard disk currently available. The **Panther-2** will sport



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1.67 GB of storage on a single, 8-platter, full-height drive. The system will also be quite quick with a 13 millisecond average seek time and will feature a built-in **SCSI** controller. OEM pricing is set at **$3650.** Maxtor Corp., 211 River Oaks Parkway, San Jose, CA 95134; **(408)432-1700.**

CELJACK LINKS MODEMS TO CELLULAR TELEPHONES

Connecting your modem to your car's cellular telephone is not quite as simple as it looks. While most cellular telephones do not provide RJ-11 modular connectors, even the few that do fail to account for Dual Tone Multifrequency or Pulse dialing modems are capable of and the off hook signal modems detect to begin the dialing sequence. The RJ11 simply allows you to transmit and receive voice or data. You must still dial manually with the handset.

Tellular Inc. of Wilmette Illinois manufactures a device to connect modems or facsimile machines to cellular telephones. The **CELJACK** plugs into the cellular telephone handset jack - replacing the handset. It provides an RJ-11 modular jack to allow the modem connection. More importantly, all tip and

ring functions of a normal land line are accomplished. In this way, to a modem, CelJack looks like a normal RJ-11 land line wall jack. To the cellular telephone, it looks just like a handset.

Telular is enormously proud of this device at **$480**. Realistically, you can now buy the entire cellular telephone for what this device costs. But to provide auto dial capability and full function for your modem while on the road, this device does the trick. Tellular Inc., 1215 Washington Ave., Wilmette, IL 60091; **(708)256-8000.**

PHONE NUMBER GEOGRAPHIC LOCATOR

MELISSA Data Company has made some headway by offering unique database products on diskette. One of their first, and still most popular products is a zip code database providing city, state, county, and other data by zip code.

The company has just announced a new product we find even more fascinating. Titled FONE*Data, the new database lists the latitude, longitude, city, state, zip code, county, and time zone for any telephone number in the U.S. by area code and prefix. The product was originally developed for programmers who needed to cross-reference telephone numbers with geographic locations.

This could dramatically enhance custom applications taking advantage of the coming Automatic Number Identification feature of most telephone networks. Under ANI, the called party receives the telephone number of the person making the call. The data is transmitted between rings over ordinary telephone lines. With FONE*DAta, you could rather easily determine the location of the calling party. For large sales organizations, this could actually be used to route the call to the nearest dealer location.

The **3 1/2 MB** database can be used with dBase, Paradox, Enable, Foxbase, and Oracle databases, or those that can import from one of the above. Additionally, it works well with custom C language programs. The product is $390 and twice yearly updates are available in February and July at **$95**. MELISSA Data Company, 32118 Paseo Adelanto, San Juan Capistrano, CA 92675; **(714)661-5885.**

128 MB ERASABLE OPTICAL DRIVE

Pinnacle Micro Inc. plans to begin shipping their **3.5**-inch erasable optical drive during the last week of June. The unit stores **128 MB** of data on a CD just a bit thicker than a standard 3.5-inch floppy. The **REO-130** model sports a 28 ms average access time making this an effective replacement for hard drive technologies. Read/write capability carries its price. An internal unit for IBM clones is priced at **$2995** while an external box is **$3195**. Each cartridge costs **$129**. Pinnacle Micro Inc., 15265 Alton Parkway, Irvine, CA 92718; **(800)553-7070.**

$99 UNIX FOR PC OWNERS

Mark Williams Co. has announced a **$99.95** clone of the **Unix** operating system for IBM PC compatible units titled **Coherent.** The package contains a single operating manual and **5** diskettes - considerably easier to deal with than the library of books and disks most Unix operating systems currently provide. Coherent operates in **640K** of memory and 10 MB of disk real estate and installs in less than 30 minutes.

Like Unix, the system is multiuser and multitasking and runs from a **64K** kernal. The package contains a **C** language compiler, Unix communications, and over **200** Unix commands. Unix source level compatibility allows many existing Unix programs to be compiled and run under the system. Mark Williams Co., 601 N. Skokie Highway, Lake Bluff, IL 60044; **(708)689-2300.**

CD PUBLISHING FOR MACINTOSH ON THE CHEAP

CD Technology Inc. offers a very attractive publishing service for small companies wishing to distribute data on CD ROMs. For a flat fee of **$1995**, Macintosh owners can have up to **600 MB** of data indexed, converted to **ISO 9660** or **High Sierra** format, and cast into the little crystal frisbee form that is currently enjoying growing popularity. The package includes **50 CD ROM** discs and retrieval software. Additional discs will cost about **$5** each. CD Technology Inc., 780 Montague Expressway #407, San Jose, CA 95131; **(408)432-8698.**

COMPUSERVE TO INTRODUCE 9600 BPS ACCESS

CompuServe Information Service has purchased an undisclosed number of **Universal Data Systems 9600 bps V.32/V.42bis** modems for use on their network. The company has had good luck with UDS modems in the past and plans to continue with the Huntsville Alabama modem vendor to bring 9600 bps capability to the CompuServe network. Initially, the modems will be placed in major cities with existing 1200 and 2400 bps units moved to less populated areas.

The new modems will come equipped with the new V.42bis compression/error correction standard. The standard provides up to 4:1 compression on some types of data and throughput of up to 34 kbps is projected. CompuServe currently has over 10,000 modems online. Almost all of them are ADS models. CompuServe Information Service, 5000 Arlington Centre Blvd., PO Box 20212, Columbus, OH 43220; **(614)457-8600.**

GENIE OFFERS ALADDIN FRONT END

The GEnie online information service has announced a free front-end applications software package for IBM machines. The **GEnie PC Aladdin** software allows callers to automate the process of logging on, checking mail, and exchanging messages on various RoundTable Bulletin Boards. The program is available for download at no charge other than connect time from the **ALADDIN** RoundTable.

The program actually began life as a shareware product. It proved so popular that the authors were eventually given their own RoundTable on the service and finally, GEnie bought the program from them in order to offer it at no charge to subscribers. Messages can be prepared offline and forwarded via Aladdin to the appropriate area. By automating these tasks, users can reduce their online time and dramatically lower the true cost of using the service.

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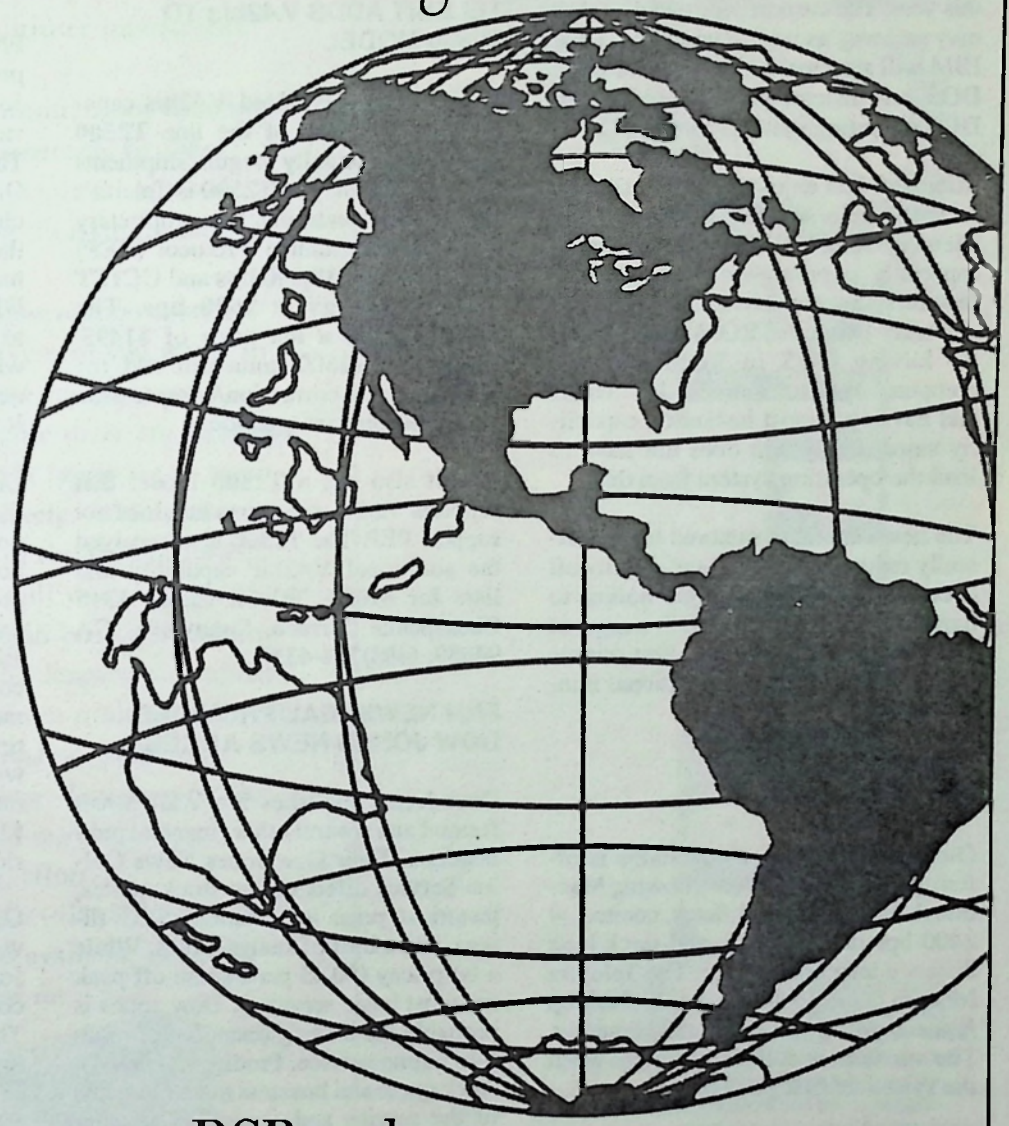

PCBoard

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The Aladdin program provides a bit better visual interface to the service but does not support a mouse interface as yet. GE Information Services, 401 N. Washington St., Rockeville, MD 20850; (800)638-9636.

MICROSOFT TO RELEASE NEW DOS

Microsoft Corp. has admitted that a major new version of their Disk Operating System (DOS) will be released this year. The current Tale of Two DOS may go away as well. Rumor has it that IBM will stop marketing a separate PC DOS and Microsoft will produce all DOS operating systems for the PC.

Microsoft has enjoyed notable success recently with a DOS in Read Only Memory ROM version that is proving especially popular with laptop manufacturers. Approximately 30 OEM are currently using the ROM-based DOS. By having DOS in ROM memory, computer systems can use less RAM and have an almost instant-on capability since the system does not have to load the operating system from disk.

The new version is rumored to dramatically reduce memory usage. Microsoft is currently operating a DOS hotline to handle questions on DOS usage at (900)896-9000. While the first minute of the call is free, each additional minute costs $2.

FAX/MODEM UNIT FOR MACINTOSH

Global Village Communications is offering a compact modem allowing Macintosh owners to send faxes, connect at 2400 bps using MNP5, and track long distance telephone usage. The Teleport Modem connects to the Apple Desktop Bus and gets power from the computer. The modem is self configuring when the system is first powered up.

A Teleport/Address Book database program automatically monitors the telephone line anytime the receiver is lifted - even for voice calls. The database tracks cities called, distance, duration, and cost and allows the user to annotate calls with specific notes.

The Teleport FAX program allows the modem to fax any Macintosh document in the background. This is a send-only fax function - no incoming faxes are handled. Those purchasing the Teleport before August 1 at $225 will receive the software at no additional charge. After August 1, the complete package will be priced at $325. Global Village Communication Inc., 1204 O'Brien Drive, Menlo Park, CA 94025; (415)329-0700.

TELEBIT ADDS V.42bis TO T2500 MODEL

Telebit Corp. has added V.42bis capability to their top of the line T2500 model and actually begun shipments this past March. The T2500 is Telebit's top product featuring the proprietary Packetized Ensemble Protocol (PEP) at speeds up to 19,200 bps and CCITT V.32 technology at 9600 bps. The T2500 carries a list price of $1495. Owners of T2500 units can add the V.42bis error correction/compression via a $99 software upgrade.

Telebit also has a T1500 model that supports V.32 connections but does not support PEP. The T1500 also received the additional V.42bis capability and lists for $1095. Telebit Corp., 1315 Chesapeake Terrace, Sunnyvale, CA 94089; (408)734-4333.

FNN NEWSREAL PROVIDES DOW JONES NEWS ACCESS

Dow Jones publishes the Wall Street Journal and several other financial publications. Their Dow Jones News Online Service offers online stock quotes, historical price information, SEC filings, and a host of analysis files. While a bit pricey ($0.45 per minute off peak for most basic services), Dow Jones is probably the leading financial information online service. Prodigy carries the stock quote and business news elements of the service and a number of other online services provide surcharged ports to Dow Jones News.

One of the best features of Dow Jones News is news itself. You can access late breaking stories indexed by stock ticker symbol or industry classification code. We've found many stories in a variety of computer weekly print publications that most closely follow the news breaking in Dow Jones News Online.

Like many large online services, the Dow Jones interface can be a bit cryptic to use. Most databases are accessed by entering // and a database mnemonic. And further, within //NEWS for example, you can access stories using a variety of cryptic codes such as .I/CMT for all stories relating to computer communications technology.

FNN NewsReal is essentially a script program to automatically dial Dow Jones News and retrieve information on stocks or industry categories of interest. The program comes with a portion of Quarterdeck's DesqView program included. You set up interest areas listing the stock and industry codes you normally monitor. The program will dial DJN, fetch all news and quotes relating to that list, and do it in the background without actually operating as a Terminate and Stay Resident (TSR) program. It works quite well in that role.

One element of FNN NewsReal that they do not tout very loudly in promotional literature is that to use it you must notify DJN that you want to use the program. It actually accesses a special database to look up your stories. While all of this dramatically reduces your connect time, there is an $11.95 per month surcharge beyond your connect time. If you access DJN regularly, you will likely more than make up this flat monthly fee. But for casual use, this $11.95 monthly overhead must be considered.

On the plus side, FNN NewsReal waives the normal $25 annual Dow Jones fee and includes five free hours of connect time during the first 30 days. This is a $160 value - essentially making the software free.

Because FNN NewsReal operates under DesqView, you can have NewsReal fetch the news on a schedule. It will pop up a little notice when news is available. Further, it is quite possible to read stories while NewsReal continues to download in the background. Further, stories and stock quotes can easily be printed or exported to ASCII text or Lotus spreadsheets. The program also has a terminal function allowing you to

The Bread Board System *(tbbs)* Information Manager provides high performance multiuser electronic mail, custom databases, and protocol file transfer on a single PC using only DOS. No LAN or multitasker required.

Think of the possibilities—up to 32 users on a single CPU using only DOS and *tbbs*. Speeds up to 19,200bps with no perceptible multiuser interference! Mix local and remote terminals.

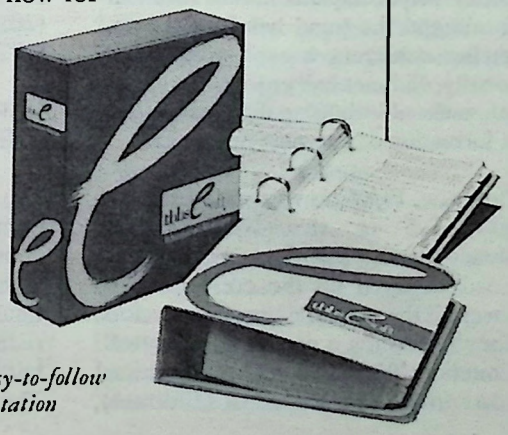
All of the complications of simultaneous multiuser file access are handled for you transparently by *tbbs*. You design and build your specific application with menu templates as though you were in a single user environment. *tbbs* does the rest.

Building custom multiuser information systems has never been easier. You get the system you want, in the shortest possible time. And once your system is built, it is extremely reliable. Because there are no tricky multiuser operating systems or LAN hardware to tame, your system will be stable immediately. Adding users does not affect any programming in the system itself, and thus can be done quickly and will work immediately.

Move beyond multiuser bulletin boards by adding The Data Base System *(tdbs)* dBASE language compiler and expansion module to allow custom multiuser dBASE programs. With *tdbs* you get the easiest multiuser dBASE capability available anywhere. Transparent file sharing, shared screen updates, and remote or local access with no extra programming effort.

16 user *tbbs* $895, 16 user *tdbs* (dBASE compiler and expansion module) $995. Also available in single and 32 user versions. Available now for immediate delivery.

Call for more information and access to a demonstration system (303) 699-6565.



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logon manually to a Dow Jones database by picking the mnemonic from a list.

The bottom line is that once you've set up your interest lists, retrieving news is a matter of telling the program to go get it - making Dow Jones News an much more useful service. The program is priced at **$179** with a special **$149** price during the three month introductory period. FNN Data Broadcasting Corp., 1900 South Norfolk St., San Mateo, CA 94403; **(800)433-7068.**

PC TO AUTOMOBILE LINK

At one time, you could troubleshoot and repair automobiles with nothing more exotic than a multimeter, dwell tachometer, and timing light. Those days, for better or for worse, are gone. Today's automobile engines are monitored and controlled by small on board computers. When you take your car to the dealer, they hook it up to a fairly sophisticated, and quite expensive diagnostic machine through a diagnostics port under the hood. The machine monitors dozens of factors while the car is running to develop a diagnosis of where the problem might be.

Mextel of Bensenville Illinois is marketing a product to link your PC to your General Motors car. The **DIACOM** product includes a wiring harness and software to connect the diagnostic port on any late model GM automobile to a desktop PC or laptop via the parallel printer port. Essentially, with this $299 software program and a laptop computer you can duplicate the functions of dedicated diagnostic equipment that costs tens of thousands of dollars.

The software displays up to 30 real-time outputs from the port including voltages, temperatures, engine speed, ignition factors. An internal database of optimum readings for various models assists diagnosis. Instead of crawling around under the hood with a multimeter and timing light, simply hookup your fender-top laptop and read what you want from the screen.

DIACOM includes the software and required cables at **$299.** A demonstration tutorial diskette is available at **$20** that illustrates all functions of the product. The demo doesn't actually monitor the port. Mextel, 159 Beeline Drive, Bensenville, IL 60106; **(800)888-4146.**

BBS WEATHERSTATION

Solus Systems Inc. of Oswego Oregon markets a product termed the Solus Personal Control Computer. This is actually a device that connects to an RS-232 port on your PC as well as to a series of sensors to gather temperature, barometric pressure, wind speed and direction, and precipitation. Software run on the PC polls the device periodically to calculate and display wind chill, high and low temperatures for various periods and daily rainfall statistics.

The device can also be used to control various appliances around the house to adjust environment based on weather events for example. **$1475.** Solus Systems Inc., 4000 Kruse Way Place, 2-285, Lake Oswego, OR 97035; **(800)247-5712.**

CONCLAVE 90 - COMBINED NETWORK CONVENTION -

Fidonet is one of the oldest personal computer networks - begun in the early days of the 1980s by Tom Jennings, author of Fido BBS software. The network today links over **7000** BBS systems spanning the globe to exchange shared messaging areas (echomail) and direct messages.

Each year, one local Fido network hosts a national convention titled FidoCon (Fidonet Convention) where system operators gather to discuss issues of import to the network and hear various speakers on new technology of interest.

Last year's FidoCon hosted approximately 90 participants in San Jose California and the trend has been toward smaller conferences each year. Additionally, Fidonet has enjoyed some organizational infighting that has resulted in formation of alternate networks.

This year, FidoCon was slated for **August 1-5** in the New Jersey Meadowlands. But the organizers decided to open up the convention to cover all the network system operators. They're hosting a convention they call **Conclave '90** which will be a combined convention of **FidoCon** (Fidonet), **AlterCon** (Alternet), **PhoenixCon** (Phoenixnet), and **GoodEggCon** (Eggnet). The event is being billed as the world's largest international convention of sysops. According to Bill VamGlahn, Chairman of the Conclave 90 Committee, by combining conventions of the various networks, this year's event should be enjoy considerably larger attendance figures. Additionally, the northeast location puts the 1990 gathering within driving distance of a much larger segment of system operators and the group expects at least 300 attendees. Lyndhurst is less than ten miles from the Newark air terminal and just outside New York City. As of May 1 they had already received over 30 advance registrations.

The program this year includes a symposium on multiline BBS systems, a presentation by Jonathan Wallace, author of SYSLAW, on legal aspects of operating a system, and roundtables on conference moderation and front-end mailer programs. Phil Becker (TBBS), Thom Henderson (SEAdog), and Bob Hartman (BinkleyTerm) all plan to attend and we understand Tim Stryker (The Major BBS) and David Terry (PCBoard) have been invited as well.

With the suddenly mushrooming interest in telecommunications, the northeast location, and the combined convention concept, we're going venture a guess that this could turn into a pretty nice BBS social event.

The conference package includes hotel room for four nights, meals, and registration. Single occupancy is priced at **$595** and double occupancy at **$450.** Participant and spouse can attend for **$620.** For further information/reservations, contact Bill Vanglann, Conclave 90, P.O. Box 12, Lyndhurst, NJ 07471; **(201)473-5153** voice; **(201)387-7995** HST data; or Fidonet **1:1/90.**

LAPTOP MARKET GROWING - PRICES FALLING

The market for laptops is enjoying phenomenal growth. The new notebook computers are doing exceptionally well. Compaq's 7 1/2 pound **LTE/286** is particularly hot with monthly shipments rising from slightly over 400 last October to over 6000 monthly by February. The company is currently having diffi-

culty keeping up with demand. But they are still aggressively seeking to position their laptops as the leader. On May 1 they cut the list price of their 40 MB LTE/286 40 from $4999 to $4799 and the 20 MB LTE/286 from $4499 to $3999. According to Storeboard Inc. of Dallas, sales of the NEC Ultralight and Zenith MinisPort have dropped 47% and 78% respectively during the same Oct-Feb period. And laptops as a percentage of total PC market sales have risen from 7.1% in October '89 to 11.7% in February '90. Some analysts are projecting growth rates for laptop sales in excess of 40% for 1990.

Apple Computer has cut laptop prices as well. It's 16+ pound monster has not been doing so well in the marketplace. They recently cut the price of the 40 MB version from $6499 to $5499 and the floppy version from $5799 to $4799.

Do Not Pay For Expensive Single-Function Phone Lines. Save Installation and Monthly Rental Expense with VSI Line-Sharing Devices. Add FAX, Modem, Credit Card Terminal, Answering Machines, Any T.A.D. to Existing Lines.

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MAN, MYTH AND MODEM: THE LEGEND OF DR. FILE FINDER

by David Hakala

"In this vast, new land
I shall call 'The Wires,'
Where I shall rule
And where Man aspires
To conquer my land
Of electrons and bytes
'Midst the stop bits' screeching
And the modems' lights;

"In this land of chaos
And colliding NAK's,
I shall leave some order
For the streaming ACK's.
I shall leave a guardian
To be a reminder,
And his name shall be
DR. FILE FINDER!"

This quotation from the apocryphal "Verses of Baud" opens the saga of a metaphorical and metamorphic journey. "The Legend of Dr. File Finder" is a not-so-carefully guarded secret of widely-traveled BBSers. We synopsize it here for what we believe to be the first time in an international print publication.

The God of "The Wires," Baud, created a champion to guard and guide weak, slow (150-300 baud) men as they first ventured into the chaos "of electrons and bytes." Dr. File Finder, as the creature is called, was endowed with a supernaturally swift 64 kbps modem, endowing him (her or it) with apparent omnipresence. The Doctor could and did log on to 300 BBS a week, while the creeping mortals could barely traverse a handful of online oasis in that time. Dr. FF was to be mankind's guide and guardian, so Baud gave his creation a taste of man's plight; the Doctor was cast out to "roam The Wires alone,"

"To learn of good times
And of tears.
To learn of hopes
As well as fears.
...
So when others come
Into my land,
He shall know of Life
And Understand!"

But the good Doctor learned only that cruising at 64,000 bit-per-second was a LOT of fun! There was no learning of the human online condition: lost carrier, line noise, long distance calls answered by tape recorders, hours-long downloads terminated by cat-dislodged extension phones, paranoid nosey sysops... you know, the usual.

So fate (or Baud, if one heeds the dark hints of His Verses) sent a teacher to the guardian "sitting there all alone, on the shore of the Sea of Parity." The old man's name was Xon, and he was crippled on his left side from several "strokes of luck." But he was what his name implied: a "flow of information streaming forth."

Old Xon told Dr. File Finder how hard life on The Wires could be, and how Xon had fallen from his once lofty perch above it all. Xon explained that he was supposed to be dead, according to his latest CAT scan. But Xon was a survivor, who believed in helping others survive.

Dr. File Finder recalled Baud's original charge: to understand the trials of man online and to be a help. The guardian rejoiced in his rediscovered mission, and asked Xon,

"'How can I possibly repay you for all that you have given me?'"

"Leaning on his cane, Xon smiled briefly, and then replied, 'Why, that's quite easy. Simply.....SHARE it!'"

Dr. File Finder began sharing all his widely-gathered knowledge with every newcomer to The Wires. The Doctor used the magical 64 kbps modem to spread the best of shareware far and wide. All the lore gathered during an immortal life in the fast line the Doctor gave.

Everywhere Dr. File Finder searched for "a system that REALLY cares about what USERS want and need. A place where the system is run FOR the users...to give them the things that THEY really want. A place that's friendly and feels like 'home'." Not finding such a utopia, the good Doctor decided to create one: DR. FILE FINDER'S BLACK BAG.

And Baud smiled and saw that it was good.

THE MAN BEHIND THE LEGEND

Yes, Virginia, there is a Dr. File Finder! We talked to him by voice line at his Colorado home, and learned his mortal identity: Mike Callahan. There is a legend, and a lot more.

Callahan, like old Jon, has been around The Wires forever. He's actually had more strokes than his mythical counterpart -- 11 infarctions all together. Most of us would be ready for the vegetable bin, but Callahan is charmingly lucid and succinct compared to many sysops we have interviewed.

And Dr. File Finder gets around quite well; he has passwords on over 2,000 BBS across the nation, stored in 13 Qmodem dialing directories. Anyone who has endured the interminable logon "information" screens, registration questionnaires and verification procedures of even a dozen boards will agree: Callahan should have an entry under "Persistence & Patience" in The Guiness Book of Records!

The power of 2,000 passwords is not hard to comprehend. Consider each BBS an automated publishing house, each sysop a laissez-faire editor who offers everything authors submit to the public. Now think of Callahan as a literary agent with the keys to the front doors of 2,000 publishers. AHHHH!!!

If Dr. File Finder likes your shareware, it will spread faster than a virus on InterNet. Callahan is a regular Johnny Appleseed of shareware, using Qmodem's script features to upload quality programs all over the country.

The overnight spread of the BIMODEM protocol was the handiwork of Dr. File Finder. A unique file transfer protocol that allows simultaneous uploading and downloading at full speed, BIMODEM languished in a two-state region for months after its release. Callahan got hold of it, and BIMODEM suddenly appeared on BBS from Seattle to Key West, Bangor to Baja. The phones at BIMODEM's home office suddenly started ringing 120 times a day.

Patrons of The Source (recently engulfed by CompuServe) owe two-thirds of their treasure house of shareware in the IBMSIG area to Dr. File Finder. He held office hours there until about two years ago, dispensing soothing patient advice to hysterical newcomers, practical prescriptions to old hands, and a "share the knowledge" philosophy to everyone.

DR. FILE FINDER'S BLACK BAG BBS

Today, Callahan keeps over 3 Gigabytes of shareware on his BBS **(901)753-7213** and in cardboard boxes of floppies around his rural Colorado home. Astute readers will say, "Hold it! That's a TENNESSEE Area Code!" So it is; the Doctor is a recent transplant to the high country, but his board is still soaking in a hickory barrel down in bluegrass country. "It cost me **$1,000** to get ONE phone line installed 'way up here," he explains.

The Black Bag hosts over 40 national conferences and 46 MB of primo shareware in 24 file areas. The BBS runs under PCBoard, with the popular ProDoor front-end system.

DR. FILE FINDER'S GUIDE TO SHAREWARE

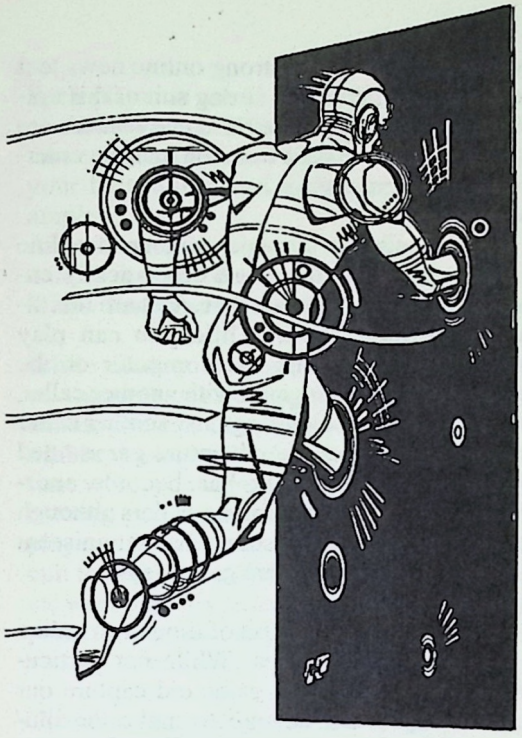
Callahan, in collaboration with Nick Anis of Computer Business Services, has compiled a massive 1,200 page bestiary entitled ***Dr. File Finder's Guide to Shareware***, available in August from Osborn-McGraw Hill. The book reveals the history and purpose of the shareware concept, explaining what to look for in a shareware package and how to support the authors worth your dollar.

Biographies of shareware's Founding Fathers and modern heroes are included. There are six full chapters on navigating The Wires to find quality shareware; how to locate particular files on various BBS systems; how to upload or download shareware. Dr. File Finder also explains offline sources of shareware such as computer user groups, disk distributors and even your local library.

The book is organized so that newborn rookies and diehard modem-maniacs alike can quickly find information at their levels. "Online Basics" begins with a study of compressed files, probably the most common bane of newcomers to The Wires ("Help! I type **PCFILE.ARC** and nothing happens!") This chapter covers the simple definitions of baud, parity, etc., but also goes into flow control and other esoterica for advanced users. A later chapter covers uploading and downloading.

The next chapter, "Attaining Mastery," covers automated script files, messages prepared offline, macros, log files and the expert modes offered by many online systems. Planning calls to save on long-distance costs and network surcharges for Telenet and PC Pursuit are also covered. This knowledge alone will save the heavy downloader more than the book's cost in a few weeks.

The relative advantages and technical details of Xmodem, Zmodem, SeaLink, Ymodem-G, Xmodem/1K-G, 1K-Xmodem (Ymodem), Jmodem, Lynx,



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(5) Quest for Magic	(6) Galactic Empire
(7) Quest for Zen	(8) Kyrandia
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(11) Chess	(12) Checkers
(13) Sea Battle	(14) Robowars

plus much more!

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(2) USA Today Decisionline
(3) BBX News from Byte Magazine
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plus much more!

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Public Message Boards for posts and replies that cover a diverse range of topics.

PC-Pursuit, StarLink, and other local access numbers are listed online.

If you want to try the MedCom BBS <u>now</u>, use your modem to call: (714)996-6666.

Several <u>FREE</u> minutes of chat, games, news, and downloads on every call!

To open your account today, call the MedCom BBS systems and create a User-ID for yourself. Then, complete and return the following:

User-ID: _____

Check one:

_____ 3 months for $20 _____ 12 months for $60

Check one:

_____ Check Enclosed
_____ VISA _____ MasterCard
_____ Discover _____ American Express

Credit Card Number: _____

Exp Date: _____ Issuing Bank: _____

Signature: _____

Name: _____

Street Address: _____

City: _____ State: _____ Zip Code: _____

Phone Number: (_____)_____-_____

After you have completed the above, mail to:

MedCom Information Systems, Inc.
6312 East Santa Ana Canyon Road #361
Anaheim Hills, CA 92807

BW

Super8K and Bimodem file transfer protocols are covered in the next chapter. There's a discussion of MNP firmware protocols as well.

Part Four of this encyclopedia is the definitive gourmet guide to shareware and public domain programs in twenty categories. Dr. File Finder's Top 40 lists his favorites, where to find them and why they were chosen.

Several useful appendices round out this tour de force. The directory of the Association of Shareware Professionals is included, a guide to a group of shareware authors who adhere to certain professional standards in their programming (no crippleware), documentation and distribution policies. Pirated, Trojan and virus programs are covered, along with countermeasures and copyright considerations. Appendix C describes the many types of "IBM-compatible" PC's on which Dr. File Finder tested all his shareware picks. Finally, Appendix D describes Dr. File Finder's Favorite Bulletin Board Systems and how to find them.

Dr. File Finder's Guide to Shareware
ISBN 881646-7 **$34.95** Osborne McGraw-Hill, 2600 Tenth Street, Berkeley, CA 94710; **(800)227-0900**

UNLIMITED ACCESS

ACCESS LA! - HOOKING UP TO TYMNET

A couple of years ago Michael Allen had an idea for an online service that couldn't miss - a clearinghouse for business borrowers and prospective lenders to get together. Actually, the concept did miss rather badly and Mr. Allen's dream of a credit matching online service failed - and mercifully swiftly.

In order to have a rags-to-riches story, you have to start with the rags. The theme of failure as the initial step toward success is becoming so common we fear it may be prerequisite. In operating the system, Allen ran into a lot of callers who just liked chatting online. So, he picked up a couple of Digiboards (multiple serial port cards) and a copy of a program titled ORACOMM. The service enjoyed some modest success but the software, originally designed just for chat, had some serious limitations. Allen began planning for the future.

To handle more lines and offer more features, he converted his system to Galacticomm's **The Major BBS**. The heart of this system, and the reason for the change, was its ability to handle 64 lines simultaneously on a PC platform via a communications kernal titled the Galacticomm Breakthrough. The problem was that the actual Major BBS interface was poor and initially, he lost a number of callers in an increasingly competitive LA market.

Fortunately, Allen had some most able technical assistance from a talented programmer - Steve Neal - who created a custom interface written in C. And by creating a bizarre combination of operating software, he produced a system with 4 MB of usable DOS memory, 64 access lines, and a reasonably usable presentation.

Today's system has been renamed **ACCESS LA!** and actually became operational in its current sense just this past April. It operates on a curious blend of hardware, software, and network services making it one of the most exotic systems technically that we've seen. The service runs on a **33 MHz 80386** and currently sports **64** lines - expansion to **256** planned for this summer. The machine sports **16 MB** of RAM memory. Of this, **10 MB** is devoted to caching the **333 MB** disk storage. By using the PharLap Extender program and some very tricky configuration setup, they also have **4 MB** of DOS RAM available.

The system looks nothing like any Major BBS you've ever seen, although bits and pieces have been retained that make the heritage clear. The system is reasonably well rounded with a wide range of message areas, and a fully stocked selection of online news products. The files area, although containing over 8000 titles, actually seems a bit Spartan. Most of it is stock CD-ROM shareware packages.

Aside from the strong online news text product area, the strong suit of this system is social. The most active areas are clearly the chat function and the entertainment section.

The service sports a number of online games and these are dramatically enhanced by the fact that most are multiline interactive. While you can play Othello against the computer or the usual game by mail with another caller, you can also play against another caller in real-time. An adventure game titled Infinity Complex has become enormously popular among callers although the interface is somewhat reminiscent of CP/M adventure game days.

We spent a good bit of time in an online poker casino area. While not particularly visual, this game did capture our imagination enough to make the illusion of entering a casino live. Once you enter, you are ostensibly in a lounge. People come in and leave - each announced by something like **PATTYCAKE JUST WALKED INTO THE LOBBY** or **BIG HANK JUST LEFT**. You can stand around in the "lobby" and chat if you like, and we did, and we did like. Several other callers were very helpful in "showing us around". Eventually we received a message something on the order of **BEAUTIFUL LADY APPROACHES AND HANDS YOU 1000 COMPLIMENTARY CHIPS**. We then had a stake to play a game of poker.

To play, you have to got to a table. You can list all the players in the casino, what tables they are playing at, and what game the dealer has selected. By entering a table number and the SIT command you can join the game.

The dealer ante's a certain amount. At this point, each player sitting at the table is prompted in turn to ante or pass. We tossed some of our imaginary chips into a five-card draw poker game. All players are dealt five cards and a rude but readable chart of what cards you have is displayed. Each player then bets in turn at a prompt by the system to **BET, CALL, or PASS**. You are told how many chips it will cost you to stay. If you enter a number higher than that you have effectively raised. After the bet has finally been called, the draw is performed.

Each player is asked in turn how many cards they want. **DISCARD125** would cause you to receive replacements for your first, fourth and fifth card for example.
Another round of betting and finally a winner is decided and awarded the pot. A new hand then commences.

While clumsy in spots, the simulation was actually quite engaging. After a few hands, you actually pictured yourself at a table playing with other people. At any time when you were not otherwise busy betting, you could chat with the other players. At times, it was actually difficult to keep in mind that the other players were actually sitting in front of computer screens in living rooms located in various cities across the continent.

The other main draw on this system is the main chat area. This is one of the most powerful chatting systems we've seen. You can chat to other people, whisper to individuals, and ask a particular person to go into private chat.

But more than this, there are two entire sets of functions that make this a most powerful presentation. Macros are essentially two character functions such as 'w. By entering 'w followed by the "handle" of another person in chat, you call up a biography they fill out when registering on the system. This gives you a little bit about their background, interests, sexual preferences, marital status, job, age, etc. There must be twenty or thirty macros to perform similar functions.

The other set of commands are called "action words". By entering a single action word followed by another's handle, you cause an entire line of descriptive text to appear on screen. For example: **/HUG Multiplex** would cause **BOARDWAT HUGS MULTIPLEX** to appear on screen. This struck us as actually a bit silly but we must defer to the more experienced participants since from all the hugging, kissing, sniffling, crying, chortling, and chuckling we saw going on, it was a most popular feature.

Actually, online text conversations are quite tricky. In normal conversation, our bodies, eyes, arms, hands, faces, and so forth form a significant portion of the communication bandwidth. But most people aren't conscious of it. Take it away, and most still think they are communicating. Misunderstandings and conflicts are very common in this environment and often the participants are left puzzled, frustrated, and confused as to why others didn't take their humorous aside as it was intended. Since online chatting allows only what you say to be seen, this is a problem. The participants on Access LA are clearly extremely adept at this communication form. By generously sprinkling their repartee with these somewhat silly looking action expressions, they are actually broadening the bandwidth and communicating much better than the medium naturally allows. We were frankly in a bit over our heads with this group of superbly practiced chatters.

Access LA presents itself as a system offering "hot adult fun" and warns that some callers may not find the service suitable due to the sexual nature of the system. In fact, no one under 18 years of age is allowed on the system. In actual practice, while there is clearly a great deal of adult heterosexual titillation going on here, as chat services go it seemed to us quite tame. Allen claims that over **70%** of his callers are in the **27-35** age group and while certainly not stiffly formal, all seemed quite mature, civilized, perhaps even genteel although they were clearly there for fun. The company has had several face-to-face picnic get togethers and a significant number of "players" on the system show up as married couples with Hondas and kids in tow. Most of the sexual banter appears to be of a "fantasy for fun" sort.

Access LA enjoys a good amount of caller activity. According to their logon which we monitored periodically through several days of activity, they are currently receiving a little over 600 callers daily and activity varied from 12 or 13 lines busy up to 24 or 25 at any one time. But Allen and his Computer Productions crew have some very impressive plans that it probably bears the space to go into some detail on here.

Essentially, the group wants Access LA to be national in scope. Most systems do. But this one appears to be pulling it off.

Tim Stryker and Galacticomm have devised a method of interfacing their Breakthrough communications kernal with a packet data card by OST that supports up to 128 logical channels on each of two packet data switching network ports. Access LA has installed a **56 kbps** direct access facility connection to the BT Tymnet network.

Tymnet is a dialup network with ports in approximately **850** cities across the United States. According to Allen, they were most receptive to his plans to hook up Access LA nationally and gave him great support in hooking up. Essentially, Access LA has **39** logical channels connected to Tymnet, **21** lines of direct connect access via the usual telephone system, and three toll-free **800** number signup lines.

We actually accessed Access LA at 9600 bps **VIA PACKET** using a USR HST Dual Standard in V.32 mode via one of Tymnet's new 9600 bps V.32 ports here in Denver. It worked superbly. To access the system via Tymnet, simply connect to the local node. Tymnet will prompt you to **ENTER YOUR TERMINAL IDENTIFIER**. Enter **A**. It then asks you for your **USER LOGON:** At this point simply press the **ENTER** key. It will then prompt you for your **PASSWORD:** Enter **ACCESS-LA** and press **ENTER**.

This connects you to the Access LA system. You will have to go through the usual brief logon there and you are in the system.

Before accessing the system via Tymnet, you must first have an account on Access LA. To register, you can use their toll-free 800 system at **(800)468-8386**. Surprisingly, they even give you a little tour of the system when you logon there. There is a one time signup fee of **$19.95** and a **$7** monthly charge. This gives you basic access to the system and one hour per day of time. Additionally daily hours are **$0.60**. While there are a few "surcharged" services, you may have some difficulty finding them and they are clearly laid out with appropriate warnings. They tend to be peripheral in nature - an LA ROCK SCENE area listing concerts, a thor-

oughbred racing oddsmaker, etc. None of the main features of the system are surcharged at all.

Tymnet access complicates matters a bit. But this is actually the strong point of using Access LA. Off-peak access (**7PM-6AM** your local time) from anywhere in the continental 48 states is billed at **$2.40** per hour. Prime time access is **$9** hourly. This is increased by **$0.75** hourly for 9600 bps Tymnet access. These are very attractive rates compared with direct dial.

The Tymnet connection provides two other elements of inevitable surprise. Access LA has the ability to dial out to other systems. In effect, you can dial in on one line and out on another. According to Allen, they plan on having about 150 other BBS from around the nation listed on a menu. You can select another BBS in another city and gain an immediate connection to it via Tymnet.

Access LA represents a technological tour de force that pushes the envelope a bit for the BBS world. The interface, although functionally rich remains a bit visually Spartan. All charges, registration procedures, and explanatory text seemed quite straight forward, honest, and reasonably easy to understand given the complications of offering various billing alternatives and the Tymnet access function. While we noted very good system performance even with 25 callers online, their one weakest area seems to be downtime - largely due to the degree they are "pushing" what the hardware and software can do. After a reasonable shakedown period, we look for this to improve. In the final analysis, the most telling element is that we genuinely enjoyed every moment on the system. And for an online service devoted to fun and entertainment, that's not a bad impression to leave on the world. Computer Productions Inc., 224 East Foothill Blvd., Monrovia, CA 91016; **(818)358-0936** voice; **(800)468-8386** data.

CIRCUIT BOARD BBS MAKES THE CONNECTION

Jack Dean is an electronics engineer at a subsidiary of Coors Beer in real life. But for some time his passion has been hobby electronics. More recently, he's caught the BBS bug. He operates a small, single-line hobby system up in Lafayette Colorado. The board is free although a $15 donation will get you enough time to grow old and die on his system.

The BBS is titled **THE CIRCUIT BOARD** and operates on a single HST Dual Standard at **(303)666-0302**. We ran into the system on a routine sweep of the local additions here in the Denver area. What caught our eye was the logon graphics. Animated ANSI color graphics are slow and irritate the starch out of many callers in that it can take five minutes sometimes to logon. But Jack has a simulation of an electronic circuit card coming together that is colorful and eye catching. As it turns out, he's something of a fan of these color graphics and has a list of BBS "Ads" on his system featuring some of the best of the art form from around the country. Many are amusing and all display a certain creativity notable in a world of sectors and tracks.

The system provides a very rounded, interesting, and visually attractive set of features. A number of online games provide some diversion - including the ever popular Tradewars. We found a survey door even more intriguing. This door program allows you to answer a series of questions - not too uncommon on bulletin board systems. The twist is that the questions are all entered by other callers. And you can add a multiple choice question to the list. The program tracks responses by both votes and percentages. Each question is multiple choice and we found a number of rather amusing questions posed - and dutifully answered by the other callers. The results were interesting and had an excellent grin factor.

The system has a number of very well maintained and catalogued file areas. The ability to display nine gigabytes of files is certainly an attraction and Jack just can't do it on his little QuickBBS system. But we often find that a smaller set of files that are scrupulously maintained, categorized, and explained can often be more interesting and useful than the large libraries. A very clear menu of files for word processing, programming, communications, archive utilities, etc. is available and each file is not only described but scored on a rating system. True to the stated theme, this system has an impressive collection of files dealing specifically with electronics - files to calculate capacitive reactance, design circuit cards, decode color codes, - oh, and one to build an atomic bomb. A text file area is just jammed with little gems.

While his current 350 users strain the limits of single line capacity, you might try to dial into this one anyway. Most of the systems we cover are striving manfully to become the next CompuServe and some of the plans tend toward the grandiose. But excellence is never a function of scope - only of excellence. This system is a good example of a small, hobby BBS system run on a minuscule budget as a diversion for the operator and for the enjoyment of a small group of callers. And this one does so exceedingly well. Hats off to you Jack Dean, 1112 Balmora Dr., Lafayette, CO 80026; **(303)665-7434**.

AUTOMOBILE PRICING BBS

Some people love to haggle and bargain for what they buy. The banter and faux anger of the fishwife is exciting and stimulating and they come away with the warm, satisfied feeling that they have received the best value possible for their hard earned dollar.

I'm not really one of them. I would rather take a shot of ice water in the groin while rats crawled up both pant legs to get a drink than go through the current ordeal required to buy an automobile. Cheesy little guys in black and white checkered sport coats make my skin crawl and the idiotic games they play with the "checking with the manager" and so forth are embarrassing.

I'm not alone. In recent years, a niche market has sprung up where small companies can make a go of it by doing the negotiation and shopping for you. Essentially, you give them the make, model, and options of the car of your dreams. They locate one and negotiate the best possible fleet purchase price. You then say yea or nay and they do the dirty deed for you. This typically costs you a couple of hundred dollars. It typically saves you a couple of thousand dollars. Screwy world.

Automobile Consumer Services Inc. performs this service out of Cincinnati Ohio. They have an online TBBS service titled, appropriately enough, Automobile Consumer Services BBS at **(513)624-0552.**

The system provides some online information. There is recall data on some 1500 models. Unfortunately, they are not really using online technology to its fullest. The company uses the bulletin board as a sort of medium to order order forms. You dial the system to order forms. A few days later you receive the form via street mail. Mail the form back in with payment for the "report". Then they mail street mail that back to you. Although the menus are efficiently done, it would seem these people miss the whole point of online technology. They are selling information in the first place. But the online service is only employed as a contact mechanism. This dramatically and disappointingly limits the usefulness of this system and brings into question the competence of the firm behind it.

The company offers a couple of interesting services. Most useful is the New car pricing report. The report lists wholesale and suggested retail pricing for both the standard automobile and all available factory options. A "sample" report on the system listed a 1990 Corvette. The convertible model had a wholesale price of $31,414 and a suggested retail of $37264 with a destination charge of $500. An entire list of options ranged from tire pressure alarms for $16 up to a $27,000 high performance package. This sample was interesting and informative. New car reports are priced at $20. You can get essentially the same thing from Consumer Reports at about the same price by calling them and ordering it.

The Fair Market Value report was virtually a lift of the NADA blue book. It lists the average retail, average wholesale, and average loan value of used models. Again the sample report was fascinating, and if it were available online by model, it might be worth something - though not likely the $10 asking price. But again, why get into a U.S. Postal mailing spree for information you can get with a voice telephone call to your bank?

The company will also locate the nearest available car with the model, color, and options you request for $50. And for another $100, they will actually negotiate the deal.

This is an excellent niche area and a fantastic concept for an online service. Unfortunately, this system serves more as an illustration of what COULD be done than it does as an actual resource. Their information offerings consist of essentially easy to obtain but inconvenient to locate data that they are quite likely overpricing beyond all reason. Their buyer service that actually locates cars and negotiates and closes sales is probably a genuine value. If they would put the full database of new car and used car pricing data online, it would probably be worth $50 or $75 per year on a subscription basis. The buyer services could remain ala carte at $50 and $100 per transaction and the system could be used to order directly. Inevitably, financing or actually purchasing a car will involve some street mail exchange of paper, but the information does not. This could be a really excellent system. Right now it isn't. Automobile Consumer Services Inc., P.O. Box 54384, Cincinnati, OH 45254; **(513)624-0551** voice.

MUSICNET BBS

Some days it doesn't seem to pay to pick up a phone. On others, we feel privileged to own one. Mike James' MusicNet BBS made this one of the latter. The system operates on four telephone lines at **(301)946-6796** and provides a sterling example of the type of specialized, well maintained information service that will have to make some dramatic moves to avoid a future collision with success.

MusicNet is packed full of current, timely, and interesting information superbly focused on the music scene. Most systems we've seen catering to the music world have done so from the relatively peripheral angle of MIDI - a technical world of computer controlled digital music and sound synthesizers. MusicNet has a small sampling of MIDI information but is more generally oriented toward the music world.

MusicNet debuted in Washington D.C. on March 1 billing itself as an online music magazine. The system provides some very current and useful bulletins. For example, they provide a weekly listing of the top 40 hits compiled by a local pop music station WRQX FM 107. They also provide the top 30 from country music station WMQZ and black hits from WHUR. A bands file lists live bands operating in the D.C. area providing contact names and telephones. A Washington music calendar lists who is playing at what club when. While James insists that it is not comprehensive, you can find somebody playing somewhere for any night of the near future. James has put a lot of work into getting on the mailing list of concert halls and nightclubs throughout the area. A list of recording studios in the area provides mailing addresses and telephone numbers.

James has also cultivated relationships with print publications and carries selected text from Maryland Musician, Washington Area Music Association News, Insider, Soundzine, Buzz, Beat Magazine, and Downhome Music.

A files area provides music related files for the IBM, Macintosh, Atari, Amiga, and Apple II. Clearly James has spent many hours collecting music related files from systems all around the country. Careful attention is evident in the two line file descriptions. We found over 200 files in the IBM area all very specific to music. There was everything from a program that plays Popeye the Sailor Man's I yam what I yam theme song to another playing Beethoven's Fur Alise through the computer speaker. A file titled BACHSBOX.ZIP plays seven J.S. Bach inventions through the speaker and does so passably well. DAISY.ZIP features a very realistic human voice singing this old favorite.

Not all files in the area are simply songs. An 88KB database purports to list the complete CBS compact disc catalog. Files are available listing the top hits from 1955 through 1962. Another provides the lyrics to every song recorded by The Grateful Dead. Several University fight-songs were available. One file reproduced various bird songs. Another allowed you to use your computer to tune a guitar.

The Leighton Hill Music Company CD database lists hundreds of compact disc recordings with prices and you can order CD from the company.

The system allows 45 minutes daily access for $39 per year, $24 for six months, or $5 for a one month trial. For a new system just coming online, James has gathered an immense amount information superbly focused on a specialty theme. And every element of it is professional. Subscribers receive a very usable little folded postcard with their password, access telephone numbers, major menu elements, and instructions. Michael James, MultiMedia Software, 6656 Coldstream Drive, Mount Airy, MD 21771; **(301)831-9600.**

SOFTWARE NOTES

DIALING DIRECTORY CONVERTERS

by David Hakala

Everyone online has his "little black book," the directory of BBS he frequently calls. Many boards offer lists or databases of BBS across the Network Nation. Boardwatch's online database, for example, includes over 10,000 names and modem phone numbers.

The problem is getting those entries into YOUR dialing directory, without laboriously transcribing them from a printed list. Two utilities, **TXTFON** and **DIRCOPY**, take the pain and errors out of this process.

TXTFON v3.0 from Victor Baron converts text lists to dialing directories for Telix 3.1, Procomm & Procomm Plus, Qmodem 3.1, BoyanD3 and/or GT Power 1400. The process is wonderfully simple and swift.

TXTFON expects very little from the user, just a clean list with one BBS entry per line (max. 80 characters per line) and fields that line up vertically. A word processor let us clean up the oddities in our list (unaligned international phone numbers for the most part) in a couple of minutes. Then we booted TXTFON and followed the intuitive menu-driven instructions.

The program asked for the name of the text file and a **.FON** file name to hold the output. We then set comm parameters and baud rate for the whole directory. The first line of the text file was displayed in a window, and we marked the beginning and end of the board name and phone number fields with the Enter and cursor keys. Then we told TXTFON to execute the conversion and got up to get a beer, figuring there would be lots of disk swapping, groaning and so on while this shareware beast flogged away at its task.

We never made it to the kitchen. Zip, zap, ding! We had a Telix dialing directory of 534 entries in under three seconds! Visual inspection indicated all entries were correct; we didn't have time or patience to dial every entry.

DIRCOPY by Mark Ellis works similar miracles on incompatible dialing directories. It will convert a Procomm **.FON** file to a Telix **.FON** file, allowing two modem maniacs to exchange their favorite hangouts. It also makes me more inclined to try out a new comm program, since I needn't re-type all my entries.

DIRCOPY works on Bitcomm v 3.55, Telix v3.11, Qmodem 4.0, Procomm Plus v1.1 and Procomm v2.42. The process involves an intermediary step, converting the source directory to an ASCII text file before translating into the new format. So DIRCOPY will also handle text BBS lists, if they are massaged into a very simple structured format. Dialing prefixes can automatically be added to all entries, a boon for commuters who need "9" or "1" at the office but not at home.

Neither program is designed to merge two dialing directories and eliminate duplicate entries. Other utilities like TFE (Telix FON Editor) offer these luxuries. But DIRCOPY and TXTFON are essentials of online living. Both are available for download to subscribers to Boardwatch Online Information System **(303)973-4222** and on many free BBS around the nation.

TELECOMMUNICATION SYSTEMS

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EXEC-PC, the country's largest electronic Bulletin Board Service (BBS), has the most extensive online collection of software available anywhere. Yours for the asking!

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"How important is the Exec-PC BBS? To borrow a line from a famous hamburger chain, I was the 1,282,770th caller served. And I do mean 'served.' Exec-PC is perhaps the premier BBS in the nation for exchanging software." BYTE IBM Special Edition

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"They provide one of the largest, most extensive libraries of public domain software in the world." Denver PC Boardwatch

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WHAT YOU COULD HAVE

Would you like public domain and shareware word processor programs, communications programs, or excellent database management systems? How about personal money managers, or General Ledger programs? If that is not enough, look at the 3000 games and 15,000 free business oriented programs, utilities, tutorials, and reviews. This gives you everything from hard disk reorganization and backup to stock market management systems. We also maintain the *entire PC-SIG collection* online, the 1400+ diskette collection of public domain software from California.

WHO HAS IT?

Exec-PC owns and operates the nation's largest electronic Bulletin Board System. Through our BBS, our huge software collection is available to anyone who has access to a modem and a telephone line. We have more than 90,000 individual files available for immediate download to your computer, 24 hours a day, every day.

WHAT IT IS

The BBS consists of a large computer with BIG disk drives (more than 6 gigabytes!) and many phone lines connected to it. The computer currently has 100+ phone lines, allowing it to talk to 100+ callers at once; it receives about 3000 calls per day. Using the BBS is easy, since it is menu driven and you simply choose what you want to do.

WE SURE HAVE FILES

A typical user will call the BBS, ask the BBS to show what files are new since his or her last call, find files of interest, then transmit those files across the phone line. After hanging up, the caller can examine and use the new software.

WE SURE DO TALK

Our BBS also has an active conference system where thousands of people share ideas and solutions. Some conferences include: PC General Topics, Communications, For Sale, Programming, Desktop Publishing, LAN, Graphics, Hardware Speedup, CAD/CAM, Private e-mail, etc. Why pay expensive consultants when there are hundreds of experts available in our forums and conferences?

HOW TO CALL THE EXEC-PC BBS

1. Set your modem for 8 data bits, No Parity, 1 stop bit.
2. Dial 414-789-4210.
3. The BBS will ask for your name, then you will be guided into the menus.

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You can call the BBS at any time without registering. You can tour the system, read messages, and download some of our files. For greater access privileges you may register at the following rates: $20 for 3 months or $60 for one year. There are no hourly or hidden fees! You may subscribe online with VISA or MC, or by credit card, check or money order with the form below.

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Credit Card Account #_____

Signature_____ Expires__/__

BBS 414-789-4210

Name_____ Date_____

Address_____

City_____ State_____ Zip_____

Telephone (___)_____

Company (optional)_____

Name you will use for Logon to BBS (required)

First_____ Last_____

Password_____

TXTFON30.ZIP: Victor G. Baron, 54 Panorama Mall, Panorama City, CA 91402. Registration fee: $10.00

DIRCOP33.ZIP: Mark Ellis, Marel Software, 465 Mitchell Ave., Elmhurst, IL 60126. Registration fee: $5.00

USER-FRIENDLY MAIL BUNDLER/READER ALSO SENDS FAX

By David Hakala

Silver Xpress by Santronics Software **(412)864-2294** (data) adds a new wrinkle to BBS e-mail: messages can be sent to any fax machine in the modem-deprived world! Silver Xpress is also an outstanding e-mail bundler and reader for heavy online correspondents. It is currently available for OPUS, Fido, TPboard and PCBoard systems. A QuickBBS version may be released by the time this article appears.

The shareware and registered Silver Xpress programs come with fax capability. Now you can send your text message to the modem-deprived as well as fellow BBSers! This opens a whole new dimension in electronic mail for BBSers, and profitable opportunities for sysops. A BBS equipped with the corresponding **FaXpress** software **($59.95)** and a fax card can act as a fax service bureau for its users. Walk-in fax services typically charge **$0.80** to **$2.00** per page transmitted. The payback period on FaXpress should be remarkably short.

Silver Xpress is a fine example of "mailer" software. Mailers increase the number of users a BBS can support by reducing the amount of time each spends online in the e-mail section. To get an idea of how much time mailers save, consider the following scenario:

You're at the post office to pick up your mail; so is everyone else on the planet. The fellow at the counter gets a thick packet of letters, calmly opens and reads one after the other, and pens a reply to each. No jury would convict you for shooting the turkey, right? But this is the normal and necessary procedure on most bulletin boards.

Civilized people grab their mail, go home and answer it, then come back and drop off a packet of replies. That's exactly what Silver Xpress and other mailers let users do. Users save long-distance charges as well as the aggravation of busy signals. The sysop enjoys more callers and more mail traffic without the hassle and expense of adding more phone lines and hardware.

Many boards have established "point" systems for their heavy users, miniature BBS that bundle mail and automatically upload it to the user's computer in the dead of night. But earlier point systems are patchworks of several programs Fido sysops developed for their Echomail and Netmail distribution. Points are anything but user-friendly; I've watched highly computer-literate people struggle for months to get a point up and running. Silver Xpress was designed for nontechnical users. I figured it out in my first encounter after just seven minutes, so the average 12-year-old should be able to use it instantly.

A Silver Xpress BBS presents the caller with a configuration menu. The user selects the e-mail areas to scan for mail, decides whether he wants all new mail, mail addressed only to him, echoed mail from other boards or only mail entered directly on the host system. A "keyword" feature can narrow the search to messages containing specified words in the headers of messages.

Next the user chooses which archive program (ARC, ZIP, LZH, etc.) Silver Xpress should use to pack his mail bundle. Then he selects a file transfer protocol, e. g., Zmodem, which will be used to download mail bundles and upload replies. The user sets the date and time of "last use," which is really an arbitrary cutoff date for selecting old mail. That's all; you're ready to use Silver Xpress!

Other options on the configuration menu let the user toggle graphics, hot keys and novice/expert mode. There's even a help session available. The menu shows the current settings of each option, a nice touch for people who forget from one call to the next.

Once your mail configuration is set, picking up new mail is a easy as logging on, pressing one menu key and waiting for Silver Xpress to do its thing. The program scans the message areas you specified for new messages since the "last used" date. It selects messages based on the keywords and other criteria you specified. The software displays a report of how many messages are in each selected area, how many are new and how many are being included in your bundle.

Then Silver Xpress archives the selected messages in one bundle labeled with the name of the BBS and the extension **OPX**. I used the autodownloading Zmodem protocol, so I didn't have to touch the keyboard to start the download process. I collected 295 messages in 13 minutes and logged off. Since I was calling Miami from Denver, I really appreciated the time saved!

Reading my mail was also a pleasure. The Silver Xpress read/reply package is also menu-driven. I unpacked it in one directory and ran it without reading the manual, just to see how friendly this mailer is.

A configuration menu popped up to ask the name and location of the editor program to use for writing replies and new messages; I chose the **XPEDT.EXE** full-screen editor included with each copy of Silver Express. Next I was asked to specify the archive program I wanted to use; this had to be the same one selected on the BBS.

These two items are the only mandatory decisions I had to make; the rest were optional. I could also have specified incoming and outgoing "mail box" subdirectories, the width of message displays, message length limit, and printer configurations.

Most of us have BBS pen pals, people with whom we frequently exchange mail. Often we use different names on different BBS. Silver Xpress includes a "distribution list" feature that automates the addressing of e-mail to regular correspondents. A couple of keystrokes will fill in the "To," "From," "Subject," Fido matrix address, and signature line.

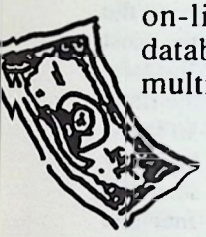
Silver Xpress will also sort mail for reading by echomail area, subject and date. You may quote portions of a message in your reply, tagging quoted lines with customizable prompts. One very

MAKE MONEY*

YOU DON'T NEED A LOT OF MONEY

Without spending a lot of money or interrupting your present career, you can transform your personal computer into a profitable multi-line bulletin board and information host system.

These systems are being used worldwide for subscription matchmaking services, on-line catalogs, multi-user databases, and all kinds of other multiple listing applications.



YOU DON'T NEED TO BE AT&T

Although our bulletin board software is being used by major corporations such as Popluar Mechanics, Continental Cablevision, and Ashton-Tate, they've chosen it for the same qualities that make it work for you. It's easy to operate and flexible enough to accommodate an incredibly wide range of uses.

Many of these systems are actually being run by people who operate them out of their homes while continuing to work full time.

YOU DON'T NEED TO BE A COMPUTER WHIZ

With the On-Line Store's software, you don't have to be a computer programmer to set up a fully customized paying system of your own. In fact, most of our success stories involve people *without* computer backgrounds.

CASE STUDY #1

Bruce Kamm: Metro On-Line

In less than a year, Bruce has developed a 16-line multi-user bulletin board system that provides social contact forums to paying subscribers throughout the Metropolitan New York area.

Bruce's system also has X.25 capabilities which serve as gateway to allow his subscribers access to a virtually unlimited array of other databases.

To see what's going on at the Metro On-Line, use your modem to call: 212/831-9280, (8/1/N).

CASE STUDY #2

Gary Clarkson: The Talk Channel

Gary started his bulletin board system at home while still employed full time. Soon, he was making so much money that he quit his job.

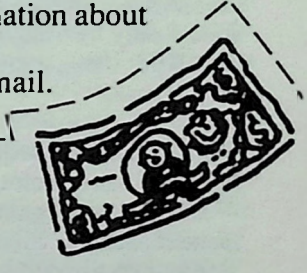
Now he has three employees and a network of affiliates that serve 34 major cities throughout the US and 8 countries worldwide via a multi-user, multi-interest bulletin board system called The Talk Channel.

To see what Gary has done with his system, use your modem to call: 818/506-0620, (8/1/N).

IF YOU NEED MORE INFORMATION. . .

You're not alone! According to the Wall Street Journal, the information service industry is growing at a staggering rate. The 1990s are fast approaching with opportunities for those with the foresight to get involved now. To learn more about how you can take your work into the future — without investing a lot of money, call: 805/650-0188, or download the demonstration version from our bulletin board: 805/650-0193 (8/1/N). Or, if you like, fill out the form below and include $10 for shipping and handling.

Demonstration disks, full documentation, case studies, a comprehensive "how to" handbook, and information about the On-Line Store's exclusive "instant business" add-on modules will be rushed to you via return mail.



*WITH YOUR PC.

For proper delivery, please complete:

Name _____

Address _____

City/State/Zip _____

Credit Card No./Exp. Date _____

☐ VISA ☐ MC ☐ AMEX

( ) _____

Daytime Phone

Please make check payable to the ON-LINE STORE
Mail to: P.O. Box 3197, Ventura, CA 93003-3197

ON-LINE STORE

Your International Headquarters for BBS

nice option is the ability to have Silver Xpress trim off the "seen-by" lines at the end of many Fido echomail messages. Net Mail sysops use this information to trace message traffic, but it's useless to almost everyone else.

The registered version of Silver Xpress (**$35.00** single-user) includes the ultimate luxury, a file-request facility. When you get mail that says, "For a good time, download **CHERYL.ZIP**," you can request the file in your mail-reply packet. After your messages are uploaded to the host BBS, Silver Xpress goes on to download the files requested. The sysop may or may not allow this option when he configures his side of Silver Xpress.

Registered packages also include options for a list of signature lines with which to close messages (e. g., "from Boardwatch with Love"), a DOS shell, and something called "off-line automatic Xpress configuration." This is a special type of message which, when uploaded to the host BBS, automatically changes your Silver Xpress configuration options on the BBS. It includes a powerful MACRO command which can perform any series of actions on the host BBS unattended. You should be thoroughly familiar with the menu structure and command sequences on a BBS before using this feature.

Silver Xpress even allows graphics, sound and zooming windows in messages, using a set of "dot" commands embedded in the text. I'm not sure if I'm ready for blinking words, changing colors and sirens in my e-mail. This feature should only be used on Xpress-configured BBS; it might drive ordinary mailers bananas.

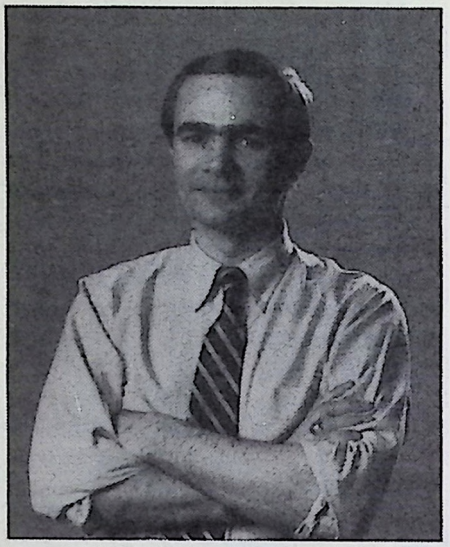
Offline mail, automated file transfers, fax distribution, color, lights and sound -- all in one elegant and well-documented package! Silver
Xpress gets top ratings.

The shareware versions of Silver Xpress for sysops (**SXP226F1.ZIP**) and users (**SXPR224.ZIP**) are available for subscribers to Boardwatch Online Information System to download at **(303)973-4222** and on many free BBS across the country. Santronics Software: 1451 Plymouth Ave. Irwin, Pa., 15642. Modem: **(412)864-2294** or Fido Netmail address 1:129/82.

GLOSSBRENNER'S CHOICE

Telex, the Tried and True

by Alfred Glossbrenner



Telex. It is definitely not a word to conjure with. In these days of electronic mail and ubiquitous FAX machines, the thought of a system that sends messages at the blinding speed of 66 words per minute lands with a dull thud. Never mind that you can send a telex to virtually any corner of the world. Never mind that you can do so directly from your personal computer. Not only is this 60-year old technology not on the leading edge, the edge isn't even in sight from the telex perspective.

And yet to this day telex remains the messaging system of choice for many businesses around the world. It is such a traditional, well-established (entrenched!) form of communication that even in Japan it is as essential to have a telex number as it is a business card.

Most Americans have only the vaguest idea of what the telex system is and does. And very few personal computer users understand the power that telex connections place in their hands. But it may be a subject well worth looking into, if only because telex gives you access to over 1.8 million locations worldwide.

We can start with the telex machine itself, since all of the special requirements and conventions you must observe in this field stem directly from this assemblage of cogs, cams, and gears.

The word telex is short for "teleprinter exchange," but the machines are also called teletypewriters (TTYs) or Teletypes. This is the machine that the very early hobbyists often rewired to serve as a computer keyboard. We'll refer to all teleprinting devices as telex machines here, with the understanding that various models differ in their capabilities.

The machine was developed during the 1920s and 1930s to overcome the most severe restriction imposed by the telegraph networks that existed at the time. Namely, the fact that you had to know Morse or some other code and be pretty handy with a telegraph key to send and receive messages. The telex machine was and is an electric typewriter-like device that has been plugged into the telegraph network.

Telex machines are used to send and receive messages in real time, the way two people might use their personal computers to converse on the CB-like facilities of CompuServe, Delphi, GEnie and other systems. But they are also used to automatically send and receive in unattended mode.

Either way, the principal advantage telex offers over the telephone or a more modern form of communication is that it produces a hard copy of what has been said. It can thus eliminate misunderstandings due to a speaker's accent. It is also well suited to communicating price lists, product codes, item numbers, and other information that would be tedious to provide over the phone. Besides, telex is usually much cheaper than a voice telephone connection, assuming you can even reach the person by phone.

The Telex Network

The main reason telex continues to be used by businesses all over the world is the telex network. Just as every telephone line has its own telephone number, every machine coupled to the telex network has its own address or "telex number." Most have also been assigned a string of characters called an "answerback." Answerbacks vary in length, though they are typically somewhere between 15 and 25 characters long. Most are also descriptive. The Ace Construction Company in New York City, for example, might use an answerback that read "ACECONST-NYC."

Telex machines are designed to automatically transmit their answerbacks whenever the calling machine requests it. This enables the caller to make sure that he or she is talking to the right machine before sending it a message. It's an important feature since many telex machines operate unattended. All telex machines are equipped with a rotary dial or other dialing mechanism. And since, just as with a computer bulletin board, you can't send a message to a machine if it's line is busy, the more expensive models have a one-button redial or auto redial feature. Because many machines on the network communicate with the five-bit "Baudot code," they can only generate 32 different signals. (That is the maximum number of five-unit combinations using on and off bits and represents two raised to the fifth power.)

Since some of these must be used for control codes like the carriage return and the line feed, the number of printing characters available is even fewer than 32. Machines of this type will handle only upper case letters, digits, and conventional punctuation marks. All of the machines on the international network use this format. This is why you may be asked to limit your messages to these characters when sending telexes and cablegrams from your computer.

Enter the Personal Computer

Prior to 1981, Western Union had a virtual monopoly on telex communications within the United States. But that year, Congress passed the Record Carrier Competition Act (RCCA) that in effect said that any communications carrier desiring interconnection with the telex network was to be able to do so on demand. This law and rulings made by the FCC forced Western Union to release its grip on the telex network and permit other firm to solicit customers and connect them to the net.

This coincided with the rising use of word processing equipment and some of the first personal computers in offices across the continent. These hardware companies could see the way things were going, and most were very interested in providing the kind of go-between services that would permit personal computers to send messages to both varieties of telex machines.

Store-and-Forward Systems

Most electronic mail networks these days can send your message to any telex machine on the globe. All of them operate on a store-and-forward basis under which you upload or key in your message, key in the telex address, and sign off. The system then handles any protocol conversions to get the message into the proper shape for its destination network and begins dialing the target machine.

Facsimile networks work the same way. In both cases a store- and-forward system insulates you from the frustrations of repeated busy signals. The systems will keep trying until they get through or they will give up after a certain number of attempts. Either way, most e-mail systems will place a confirmation of delivery message in your mailbox or a note indicating that the message could not be delivered for some particular reason.

It is important to point out that the telex/e-mail network operates in both directions. Not only can you send to any machine on the net, you can receive messages from any machine as well. These appear in your electronic mail box as normal e-mail messages. E-mail systems handle the matter of your personal telex address differently. On Delphi, messages must be sent to Delphi's own telex account, and the first line of each message must contain your Delphi member name or handle on the system. On MCI Mail, your telex number is your account number, without hyphens, preceded by 650. On Western Union's EasyLink, your mailbox number is your telex number.

How to Use Telex

Whether your message ends up in someone's electronic mailbox or at a real telex machine, there are some things you need to know to use a telex system effectively from your personal computer. The most important point is the fact that everything about the telex system is determined by the 50 bits per second (bps), 66-word per minute telex machine discussed earlier.

For example, there can be no more than 69 characters per line. (The EasyLink limit is 68, but 69 characters is the industry standard.) And, for reasons explained earlier, only upper case letters and the other characters may be used. If you upload in mixed case, some carriers will perform the case conversion automatically before the message is sent free of charge. Some may charge you double the per-character rate if they do the conversion. One way or another, though, your text reaches the telex network in upper case. That means that all of the messages you receive will be in upper case as well.

The 50 bps telex machine is also the basis of the telex network's billing system and of the agreements the various carriers have among themselves regarding the apportionment of costs and income. Thus, although you upload your message at 1200 bps, it will be pumped into the network at 50 bps and you will be charged by the "telex minute" -- the time required to print out your message on a 50 bps telex machine – or fraction thereof. This is true even if you are sending to an electronic mailbox belonging to someone on another system.

To give you a better idea of what this means, most systems operate on the following equation: 50 bits per second = 400 characters/minute = 66 words/minute

"Words" are estimated at an average of about six characters each, but that's largely irrelevant since characters – including the space character -- are what you pay for. If your margins are set for 65 characters per line, 400 characters will equal slightly more than six lines.

How to Locate Telex Numbers

As you can imagine, many companies publish directories of telex numbers. The Cadillac of the field is the Jaeger-Waldmann International Directory, and at $187 (including shipping) for all nine volumes. Volumes cover Countries A-F, Countries G-I, etc., plus "Yellow Pages." There is also a volume organized by answerback so you can look up who a message is from. Most volumes can be purchased separately. You may be able to find a copy of the entire set in the reference section of your library.

Jaeger-Waldmann
Universal Media
P.O. Box 45
Bethpage, NY 11714-0045
(516) 433-6767
TLX: 967753 INTL TLX BETH

The Green directories are organized by continent, instead of by country. They too, are expensive, ranging from $80 for Africa to $240 for Europe. But like the Jaeger-Waldmann, the Green directories are considered a standard reference.

The Green International Directories

Teleprint International
(Customer Service Office)
P.O. Box 3796
Chico, CA 95927
(916)345-7599

The Western Union directory may be all you need, however, and it is certainly the one with which to start. Over 1,900 pages long, it is the size of a major metropolitan phone book. If you're an EasyLink subscriber, you can get the Western Union directory for free. Additional copies or copies for non- subscribers are **$30** each, including shipping. Call EasyLink Customer Service for more information at **(800) 435-7375**, or send your order to:

Western Union's Telex Network
Western Union Directory Center
13022-A Hollenberg Drive
Bridgeton, MO 63044

Conclusion

Telex is hardly a vibrant technology. But it really does get the job done. It is one more way to use a communicating personal computer, and who knows the need to send a telex may arise? It may be old and unbelievably slow. But the worldwide telex system is likely to continue humming along for many years to come.

BOARDWATCH BBS CLASSIFIED ADS

One popular feature of Boardwatch Magazine is our lists of electronic bulletin board systems. The reason most magazines don't include such lists is that there are maintenance problems. The infant BBS industry is volatile and exciting. Many boards come and go in as little as six months. Others have been in operation since 1982/83 continuously. Our national list includes systems we find particularly useful by virtue of some type of specialized information, product support or other function.

There are problems with this. For one thing, we would estimate there are roughly 18,000 systems in operation now. Our list represents about 1% of that number. If we had a reasonably good listing of all 18,000 systems, it would require 300 pages to print it using our current format. If we could get a connect each 5 minutes, it would require approximately 62.5 days per month (24 hour days) to verify the list. You see the problem.

We have no objective, scientific methodology for selecting boards for the list. As we happen across them and they catch our fancy, we add them. This isn't very professional. It's certainly not fair to the many hundreds of excellent systems we don't encounter. And it's time to come clean. What you really have here is one fat kid's dialing directory.

Since our first issue in March 1987 Boardwatch has grown conservatively but without pause. We don't think there is anyone in the industry we haven't alienated during that period and frankly, even today what we don't know about running a magazine could be the subject of one. We've pestered the hell out of PR departments across the country and irritated countless system operators by asking just exactly the wrong questions and managing to dodge the ones they are waiting and eager to answer. Our penchant for ugly photos and rough paper have almost become trademarks. We hear New Yorker is considering copying our format.

But somehow we still have 70 of the original 109 readers that subscribed during March, April, and May of 1987 - our first three months of publication. If we could figure out what we are doing right we would do a lot more of it. In recent months our readership has grown more dramatically. Interest in our display advertising, not really a main line of business just a year ago, is increasing daily and those advertising seem to be getting a good response.

Recently we've received an inordinate number of inquiries as to how to get on the list. Of course, we get a few occasionally on how to get OFF the list as well. But the point is that the number of inquiries has increased to the point of qualifying as a trend. And that has our curiosity up.

Of the 18,000 BBS systems, fully 150 are hobby boards designed as a hobby, operated as a hobby, and will always be a hobby. Another 150 are actually making very good money. In between is a vast number of BBS that either make just enough money to cover line charges and an occasional techno-toy, or have pretty immediate plans to do so.

There are actually very few system operators in the world who have not at least toyed with the idea of what it would be like to run a pofitable online service full time. A large enough handful are doing it to make such dreams seem ever so close. The realities of adding subscribers one and two at a time and the costs involved in building up a system make them seem ever so far away.

Any basic pop-business book will tell you in the first ten pages that the first thing any startup business has to do is advertise. There is no debate there. The problem is that in most businesses, almost everyone qualifies as a customer. This simply isn't true for BBS operators. Where do they advertise? If they take a full page in a major national news magazine; Time, BusinessWeek, Readers Digest, etc., they will pay an ad rate based on the total number of readers. Yet only 8% of the people in this country have access to a modem and without

Letter Quality Print from an El Cheapo Printer

Yardley, PA -- Scientists say that human beings use only about five percent of their available brain capacity. Much the same could be said of the typical nine-pin or "nine-wire" dot matrix printer. They're fine for quick drafts and screen dumps, but few produce business correspondence you can be proud of.

Well, if you have an IBM or compatible computer, stand by for a big surprise. You really *can* get quality from an inexpensive nine-pin dot matrix printer so good that you will absolutely not believe your eyes. Crisp character definition, a wide variety of fonts (typestyles), and special print features so impressive that the correspondence you produce need never take a backseat again.

And the price? The price may be the best part of all, since the software that makes all this possible is shareware. That means it's widely available, usually for the cost of a disk and postage or several minutes of online time.

It also means that you get a full-blown, commercial-quality package, complete with an on-disk manual ready for printing. But most important of all, it means that you don't have to pay the programmer even a portion of the modest, voluntary registration fee if you don't like the product. It's "try-before-you-buy," sofware on the honor system.

Trouble in Paradise

There's just one problem with shareware and its close cousin, public domain (PD) software: There is so much of it that it's nearly impossible to know which programs to get.

CompuServe, GEnie, BIX, and others have tons of the stuff for you to download. So do most bulletin board systems (BBS). But how many times have you been online and, intrigued by a file's description, decided to download it -- only to find that it's either trash, or buggy, or not at all what you were looking for? Worst of all, obtaining that clunker just cost you maybe half an hour of connect time or long distance charges.

Mail order firms are generally a less expensive alternative. But have you seen their catalogues? Most offer dozens of programs for each application -- 15 spreadsheets, 45 word processors, 10 zillion communications programs, and so on. Yet most give you only a single, sparse sentence of description to go on.

So what do you do? You end up ordering -- and paying the distribution fee for -- several disks in each category. Then you spend hours going through them: printing out the documentation, running the program, feeding it sample data, and taking notes on what you like and dislike about the package compared to the others in the pile.

By the time you're done, you're convinced that "free" or not, shareware is no bargain. You add up all your costs and realize you'd have been better off spending several hundred dollars on a commercial package.

And how do you know whether you can count on the programmer to give you the support you need once you send in the registration fee? You could phone each one individually, but who has time for that?

The Answer

If only you could commission someone to do the work for you. Well your wish is about to come true, for St. Martin's Press has published **Alfred Glossbrenner's Master Guide to FREE Software for IBMs and Compatible Computers (530 pp. $18.95).** This is the book longtime Capital PC SIG chairman and ABC News correspondent Brit Hume called "one of the all-time best books" [*Washington Post*].

It's the one about which *New York Times* columnist L. R. Shannon wrote: "If you cannot find at least a couple of programs that will pay for the price of the book, you haven't read it."

Packed with hands-on tips and tricks -- how to quickly and efficiently tap the free software libraries of all the leading online systems, for example, not to mention BBSs, user groups, and mail order firms -- it's even got a "Background and Basics" tutorial for new and inexperienced PC users.

Written by the author of *The Complete Handbook of Personal Computer Communications* and over a dozen other books, this is the one that doesn't pull any punches -- it tells you exactly which programs to get and why. Including how to get letter-quality output, fonts, and lots of other things from an el cheapo printer.

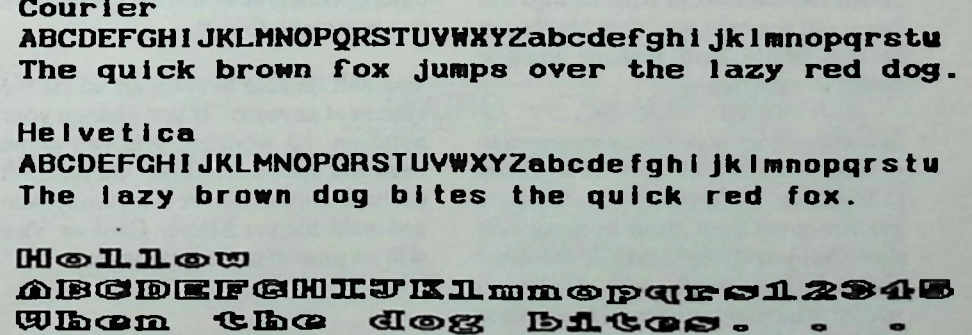
You'll find copies in all major bookstores and libraries. But as a special offer for **Boardwatch** readers, we'll send you both the book and a disk with the two best letter quality print programs for just $18.95. (Please specify disk size.)

If you want the disk only, send $5 for 5.25-inch or $6 for 3.5- inch media, and ask for PRINTER Disk 2.

The latest Glossbrenner's Choice shareware/PD catalogue and book brochures are available free of charge. Make checks or U.S. dollar money orders payable to FireCrystal Communications. Contact:

FireCrystal Communications
699 River Road
Yardley, PA 19067
(800) 628-7637

Figure 1. Three of more than 20 fonts supplied on Printer Disk 2.



one, an electronic BBS as we know it is a pretty dull deal. Diluting their advertising dollars by 92% doesn't seem to be a good ploy. TV? Newspapers? Radio? Pretty much the same problem.

Even computer specific publications don't do much better. Only 25-30% of their readers have modems. But they don't discount their advertising rates to 25-30% of the usual charge just because you operate a BBS. Any BBS in the country would probably enjoy marvelous response from a full page ad in a major computer publication. The problem is, the ad would cost about three times what the response would generate in income. It's like the fellow buying nice leatherbound notebooks for $3 and selling them for $1. He'll make it up on volume?

One sysop pointed out quite rightly that with just a handful of system subscribers, he didn't feel he could afford a full page ad in Boardwatch and we didn't offer anything he could afford . That's actually a good point.

It would be nice if we could just ad him to the list. Our readers like BBS systems and they all have modems. The BBS like readers to call. There is just one problem. Recall that we said the infant BBS industry is volatile. Systems come up. Systems go down. The telephone company will wait about 45 minutes after disconnecting the line from a defunct BBS before reassigning the number to some lady who runs a hair-setting salon in Peoria. What do we tell her when **Mable's House of Hair** starts receiving not the dozens of anxious callers with darkening roots she expected when starting her new business but rather dozens or hundreds of calls from a lot of bald plastic modems. This has been a real problem in the past. At least one major publication we know of that has dabbled in BBS listings has found out the hard way that Mable can be one pretty mad matron when it comes to modems.

In our opinion, it is not appropriate to publish telephone numbers in a printed publication without making a pretty genuine good faith effort to make sure that what you thought was on the other end of the line is really there. Mable, no matter what your opinion of hair setting salons, doesn't deserve that kind of crap. Anyone publishing a list of BBS in any form, without making a reasonably pro-active attempt at verifying the numbers, is acting irresponsibly. And that applies to BBS carrying electronic lists for download as well.

The bottom line is that we can't verify 600 BBS on any regular schedule and still publish a magazine. So we are going to do something we said we would never do - classified ads. We intend this area to actually serve as another BBS list - no tupperware ads please. But, the system operators are going to have to verify themselves by paying $25 for their entry each month. In return, we'll give them a little more room to tell their story in their own words. We expect few will advertise dead numbers at $25. On the other hand, it shouldn't break the bank for the small operator and it should certainly pull enough subscribers to pay its own freight.

The ads will be a bit controlled in a sense. To enter an ad, dial our system at **(303)973-4222** and complete an online database entry. Everyone will have essentially the same basic header information listing title, telephone number, location, sysop, type of machine, software, modem, and fee. This already gets into considerably more detail than our sideways listings. But after filling in the necessary statistics, you'll be able to enter about 200 characters of description to give the world an idea of what you have to offer.

A separate screen allows you to enter non-published data such as your mailing address, voice telephone, Master Card or Visa number, and which month you want your ad to run. After filling out the entry, you can view a pretty close approximation of what the ad will look like in print and browse ads from other operators as well. We'll print these in a paragraph format.

You will be able to enter an ad on the system at anytime. If you change your mind on the wording, you can come back and update it online. On the 25th of the month, whatever is on the system and paid for via Master Card or Visa will be printed in the next issue.

We will also accept standard 2 X 3.5-inch business card ads from bulletin board systems at $40 each to appear in the same classified section. Please mail these with payment specifying the issue in which it should appear.

We would like to offer a full page ad in Boardwatch for $3 per month and subscriptions at $1 per year. We've discussed this with our printer, the Postmaster, the telephone company, the utility company, our retail distributors, and several people knowledgeable on such things in the publishing industry. They've almost unanimously tried to discourage this and they all seem like such intelligent and persuasive people that we've pretty much decided to go along with them - at least for now. But hopefully, this program will provide an avenue of exposure for BBS operators who are trying to get started in a fascinating new cottage industry.

Jack Rickard

STOCK OF THE WEEK

ONLINE BROKERAGE COMPETITIVE RATES

For A Free Brochure
On CompuServe
GO TKR

300 - 9600 Baud Modem
(212) 809-1160
5PM to 9AM, Weekdays
24 Hours Weekends

Call Toll Free
(800) 223-6642 (Voice)

In New York Call
(212) 908-4550

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BOARDWATCH MAGAZINE
Classified Electronic Bulletin Board Advertisements

Advertise your electronic bulletin board/online information service in Boardwatch Magazine. Let our readers know who you are and what you are doing with online technology. To order a BBS ad in the Boardwatch Classified BBS ad section, call the Boardwatch Online Information Service at (303)973-4222 and use our automated ad entry system. In addition to standard list information, you may enter up to 255 characters of text describing your online service. - all for $25 via Master Card or Visa. We will also accept Standard 2 X 3.5-inch business cards advertising BBS at $40.

Bruce's Bar & Grill (203)236-3761 West Hartford Connecticutt since 08/83. Sysop: Bruce Lomasky. Using TBBS 2.1M via 24 lines on MS-DOS 80386 with 300+ MB storage. US Robotics HST DS 19,200 bps. Fee: None. Bruce's Bar and Grill has a similar atmosphere to TV's "Cheers". Public, Private, and Over21 Conference Sections. Many regulars stop by and chat each day. Many online games (some multi-user real time) and thousands of IBM files.

Risky Business TBBS (404)333-8800 Atlanta Georgia since 08/89. Sysop: Joel Goodson. Using TBBS 2.1M via 5 lines on MS-DOS 80386 with 615 MB. Universal Data Systems 2400 bps. Fee: $25 per six months. Tons of Online Games, Multi-Line Chat, Message Areas and a huge 550-meg CD-ROM Drive FULL of public domain software. Member of NCC Adult BBS Network.

Amiga Atlanta TBBS (404)351-6056 Atlanta Georgia since 04/88. Sysop: Rory Didas. Using TBBS 2.1s via 1 line on MS-DOS 80286 with 80 MB storage. Hayes 2400 bps. Fee: $25 per six months. Just upgraded to TBBS system. Home of Amiga Atlanta, Inc., the local Amiga Users Group, w/50mb of Amiga S/W. Plans for 2 - 3 lines this yr.

The INDEX System TBBS (tm) (404) 951-1540 Atlanta Georgia since 04/84. Sysop: Rodney A. Aloia. Using TBBS 2.1M via 3 lines on MS-DOS 80386 with 120 MB. US Robotics HST DS/Hayes Ultra 96. Fee: None. Largest CoCo BBS in the Southeast, also a SDNet/WorksI Member. Home of "Today/TDBS", "The Online Catalog", and other TDBS/TBBS applications. USA Today News.

DATA POINT (501)442-8777 Fayetteville Arkansas since 01/83. Sysop: Gary Funk. Using TBBS 2.1M[16] via 4 lines on MS-DOS 80286 with 260 MB storage. US Robotics HST 9600 bps. Fee: $2 Yearly. Data Point offers many on-line publications and games. Distribution library for SDN, SDS, and TDN files. Support for MS-DOS, Commodore, and Amiga. TBBS/TDBS/TIMS support for sysops and users.

Future Quest (512)834-1992 Austin Texas since 09/87. Sysop: Kevin Basey. Using TBBS 2.1s via 1 line on MS-DOS 80286 with 80 MB storage. Fee: None. General Interest System with Adult Areas. Huge .GIF Graphics File Library. Online Games. 20+ Echomail Conferences.

The Livewire BBS (609)866-2551 Mt.Laurel, New Jersey since 08/89. Sysop: Richard Paquette. Using PCBoard V 14.E/6 via 3 lines on MS-DOS 80286 with 400+ MB storage. US Robotics HST DS 19,200 bps. Fee: None. Features the LiveStore with 20+ Product Departments for On-Line ordering with Visa/MC. Home of: BBS Callers Digest, The LiveStore, Discount-Magazine Door. BoardWatch, USA Today, Info-Mat, Zip Beep and Business Sense along with Online Digital Music Review. Multi-Play games with 80+ Doors and lots of PcRelay Network message based conferences Call Us...

The Pinnacle (703)471-7111 Reston Virginia since 06/88. Sysop: Bill Kirkpatrick. Using TBBS 2.1M via 4 lines on MS-DOS 80386 with 650+ MB storage. US Robotics HST 9600 bps. Fee: None. Messaging - Fidonet Echoes. Online chat. PC-SIG Public Domain Library on CD-ROM. USA Today News and Infomat. Online Games.

Micro Message Service (MMS) (919)779-6674 Raleigh, North Carolina since 10/82. Sysop: Michael M. Stroud. Using TBBS 2.1 via 7 lines on MS-DOS 80386 with 1.4 GB storage. US Robotics HST 9600 bps. Fee: $35 per year. MMS support IBM PC, Amiga, Macintosh, Atari ST, Apple and other SIGs. Online multi-user games. Largest software collection on the East Coast with 1.4 Gigabytes of storage.

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BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - JUNE 1990

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
Access LA!	(800)468-8386	. Adult Multiline Chat System - Games - Magazines - Downloads	Michael Allen	Monrovia ,CA
ADA Information Clearinghouse	(202)694-0215	. Information on ADA Programming Language/Military Specs	Department of Defense	Washington ,D.C.
ANARC BBS	(913)345-1978	. World Radio/TV Handbook - Short Wave Freq Lists/Scheds.	Assoc. of North American Radio Clubs	,KS
Applied Modeling Research RBBS	(919)541-1325	. Environmental Protection Agency Atmospheric Models	William Peterson/EPA	Hurdle Mills ,NC
Ashton-Tate Technical Support	(213)324-2188	. dBase and Multimate Support - CIS HOST NAME:ATBBS	Ashton-Tate Corporation	Torrance ,CA
AST Technical Services BBS	(714)852-1872	. Superb support system for AST Computer Products	AST Research Inc.	Irvine ,CA
AT&T Support BBS	(201)769-6397	. Support for PC 6300 and Other AT&T PC Models	American Telephone/Telegraph PC Division	Plainfield ,NJ
Audiophile Network	(818)988-0452	. High-end Audio Components, Music, Video Reviews	Guy Hickey/Quatre Speakers	Van Nuys ,CA
Automobile Consumer Services	(513)624-0552	. New Car Pricing Reports - Used Car Value Reports	Automobile Consumer Services Inc.	Cincinnati ,OH
Baud Town	(818)893-0340	. Relaxed, Friendly Social BBS- USA Today/Newsbytes/Boardwatch	Linda Saenz/Fred Gernand	Granada Hills ,CA
BBS Press Service	(913)478-9239	. Home of INFOMAT Online Weekly PC News Magazine	Alan Bechtold/BBS Press Service	Topeka ,KS
BellSouth's TUG Gateway	(404)594-3984	. Transtext Universal Gateway - Atlanta Journal-Constitution	BellSouth	Atlanta ,GA
Best Friends BBS	(714)832-5902	. DLX Multiline Chat/Match Social/Sexual	Ann and Joe Wiseman	Fountain Valley ,CA
Big Peach BBS	(404)446-6650	. Home of Automenu and Treeview Software	Marshall Magee/Magee Enterprises	Norcross ,GA
Big Sky Telegraph	(406)683-7680	. Education/Econ Development info to Montana rural Communities	Montanna Rural Education Network	Dillon ,MT
BMUG BBS	(415)849-2684	. Support for Macintosh owners - files - conferences.	Berkeley Macintosh Users Group	Berkeley ,CA
Book BBS	(215)657-6130	. Information on 2000 Computer Books - 800 order number	Business & Computer Book Store	Willow Grove ,PA
Boston Citinet	(617)439-5699	. City of Boston Information Service - Advertising Supported	Advanced Videotext Systems	Boston ,MA
Brown Bag Software BBS	(408)371-7654	. Power Menu/ PC Outline Software Support	Brown Bag Software	Campbell ,CA
Bruce's Bar & Grill	(203)236-3761	. 24-line Social System - Chat - Games - Downloads	Bruce Lomasky	West Hartford ,CT
ButtonWare BBS	(206)454-2629	. PC-File dB / PC-Calc / PC-Type Software Support	Jim Button/ButtonWare	Bellevue ,WA
C.A.R.L Library Service	(303)863-1350	. Citations to 2 Million Texts in Colorado Library System FREE	Colorado Alliance of Research Libraries	Denver ,CO
Canada Remote Systems	(416)232-0442	. Probably Canada's largest BBS/Online Information Service	Jud Newell	Toronto ,Ontario
CatHouse BBS 206/2901	(805)395-0650	. Multiline Support System for Wildcat BBS Software	Mustang Software	Bakersfield ,CA
Cathouse II SuperSystem	(513)528-0505	. TV Satellite Dish Info - Videocypher Descrambler Info	Seed City Engineering	Cincinnati ,OH
Census Bureau Office Automation	(301)763-4576	. Microcomputers and Office Automation	US Dept. of Commerce/Nevins Frankel	Suitland ,MD
Census Bureau Personnel Division	(301)763-4574	. Employment Opportunities Within the Census Bureau	US Dept. of Commerce/Nevins Frankel	Suitland ,MD
Channel 1	(617)354-8873	. Thirty-line PCBoard System - 2.5 Gigabytes	Brian Miller/Tess Heder	Cambridge ,MA
Chicago SysLink	(312)622-4442	. TRS 80 Support - Adult Chatline Function	George Matyaszek	Chicago ,IL
Classi Computer Fieds	(317)359-5199	. Online System for Classified Advertisements	Steve Edsall/Trader Newspaper	Indiannapolis ,IN
Clean Air BBS	(408)298-4277	. Environmental Health/Cigarette Smoking Topics	American Lung Association/ Sheila Blash	San Jose ,CA
Cleveland Freenet	(216)368-3888	. Cleveland City Information/Ohio Governor's Office Online	Case Western University/AT&T/Ohio Bell	Cleveland ,OH
COCONET	(619)456-0815	. San Diego Movies/Plays/Theatres Online - Requires Software	Brian and Patricia Dear	La Jolla ,CA
Computer Business Services	(714)396-0014	. Computer Columnist John C. Dvorak's office BBS	John C. Dvorak and Nick Anis Jr.	Diamond Bar ,CA
Computing Canada Online	(416)497-5263	. Adjunct to Excellent Canadian PC Newspaper	Computing Canada Newspaper	Willowdale ,Ontario
Crosstalk Communications BBS	(404)641-1803	. Product Support for Crosstalk for Windows/MK4/XVI	Digital Communications Associates	Roswell ,GA
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Cul-de-Sac Bar & Grill	(508)429-1784	. Multiline Service - Ham Radio - Humor - Echomail - Games	Pete White	Holliston ,MA
Dante Project BBS	(603)643-6310	. Commentary/Research on Dante's Divinia Comedia	Dartmouth College	Hanover ,NH
DataLink RBBS System	(214)394-7438	. Weather Satellite Imaging, NOAA Satellite Tracking-AMSAT-NA	Dallas Remote Imaging Group/Jeff Wallach	Carrollton ,TX
Dr. Dobbs Listing Service	(603)882-1599	. Source Code from Dr. Dobb's Journal, MIPS, and DBMS Mags.	M&T Publishing/Computer Metrics	Redwood City ,CA
Economic Bulletin Board	(202)377-0433	. Economic Statistics/GNP/CPI/Employment, Trade Opportunities	US Department of Commerce	Springfield ,VA
Eesti BBS #1	7 0142 422583	. First BBS in USSR - Estonian Business Issues	Lembit Pirn/Estonian Business Assoc.	Tallinn ,Estonia
ELISA II	(202)697-3632	. Export License Status Advisor - Technology Export Issues	Defense Technology Security Admin.	Washington ,D.C.
Energy Info Admin E-Publications	(202)586-8658	. Variety of Petroleum/Coal/Electricity Energy Statistics	US Department of Energy	Washington ,D.C.
Event Horizons	(503)777-1578	. Digitized Graphics Image Library	Jim Maxey	Portland ,OR
EXEC-PC	(414)789-4210	. Largest BBS in US - 90 Lines - 70,000 files - 4 Gigabytes	Bob Mahoney	Shorewood ,WI
Far West BBS	(604)381-4430	. Large Western Canada Galacticomm Info System	Ren L'Ecuyer	Victoria ,BC
FCC Public Access Link	(301)725-1072	. Equipment Authorization Status Advisory Service	Federal Communications Commission	Columbia ,MD
Federal Deposit Insurance Corp.	(202)737-7264	. General Microcomputer Information	R. Campbell and L. Rudolph	Washington ,D.C.
Federal Job Information Center	(313)226-4423	. Federal Job Opportunity Lists available online	US Office of Personnel Management	Detroit ,MI
FEDLINK ALIX	(202)287-9656	. Info on Federal Libraries -Excerpts Library of Congress News	Federal Library Information Network	Washington ,D.C.
File Cabinet BBS	(215)678-9854	. 10-line PCBoard System. 959 MB-100 Conferences-80,000 files	Dan Bair	Wyomissing ,PA
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Forbin Project, The	(319)233-6157	Home of QModem SST Communications Software
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GLIB	(703)578-4542	Gay and Lesbian Information Bureau - 11 Lines - 9600 bps
Greenpeace Environet	(415)861-6503	Ecological and Peace Issues - Disarmament/Toxics/Wildlife
GT PowerComm BBS	(713)772-2090	Home of GT Power Communications Software
Hay Locator	(317)494-6643	Database of Hay/Straw Suppliers and Buyers
Hayes Advanced Systems Support	(800)874-2937	Customer Support Line for Hayes Customers. V-series/Ultra
Herpnet/Satronics TBBS	(215)698-1905	Reptile and Amphibian Studies - Poison Snakes/Toads/Fish
IBM Users Group Support BBS	(404)988-2790	IBM PC User Groups Database - Newsletter Exchange
Imaging GraphicsLine BBS	(415)968-1834	Paradise/Verticom Graphics Products - .GIFs
Inbound/Outbound	(212)989-4675	Telephone Sales Publication Online Service
Info-Source Canada	(416)574-1313	Online publications
Information Resources Services	(202)535-7661	Fed Micro Procurement Rpts. - List of Banned Contractors
Intel Support BBS	(503)645-6275	Support for Intel PC Products - Inboard 386/AboveBoard 286
Investor's Online Data	(206)285-5359	Online Investment/Stock Market Information/Tech Analysis
JAG-NET	(202)325-0748	Navy Judge Advocate General's Information Network
JDR Microdevices BBS	(408)559-0253	Online Hardware Order - Catalog - 1.1 GB Files - Quizzes
JOBBS	(404)992-8937	Online Job Listings - 2186 Technical Pos. - 10,000 Corps.
KIMBERELY BBS	(612)340-2489	Prime Rate-Fed Funds-T-Bill-Discount Rate-Economic Data
Lasergems Computer Hotline	(602)867-7258	Mail Order Laser Salvage/Supply - Laser Eavesdropping Device
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MCI ONE Consultant Support	(800)873-5548	ANI Developers/Rates/Press Releases/Tech Notes
MEDCOM BBS Club	(800)445-4227	80 nodes - Games - Chat Lines - News Services
Micro Foundry, The	(415)598-0498	520 MB Downloads - Growing to Become the Best - Boardwatch
Micro Message Service	(919)779-6674	USA Today/Boxoffice Magazine - Large Download Area
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Microrim Technical Support BBS	(206)881-8119	Support for Popular R:Base Relational Data Base System
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MusicNet	(301)946-6796	CD Catalog, Music News, Music Files, Top 40 Listings
NANci BBS	(202)475-1973	Online Version of Naval Aviation News Magazine
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NASA Spacelink	(205)895-0028	NASA Educational Affairs Div. - Flight Data/Space History
National Agricultural Library	(301)344-8510	Agricultural Info/Research Resources
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National Inst.Science Technology	(301)948-5717	Micro Elect.Info Exchange - Virus Protection/Security Issues
National Publishers Exchange	(813)989-1087	Headquarters for NPE Newsletter - Desktop Publishing
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NAVWESA	(202)433-6639	Naval Weapons Engineering Support
NIST ACTS	(303)494-4775	Automated Computer Telephone Service - Sync PC to NBS Time
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Oracle PC	6108 260-6222	South Australian TBBS Multiline System
Osprey's Nest	(301)989-9036	Birdwatching, Bird feeding, Naturalist/Ecology Issues
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Girard Westerberg	Littleton ,CO
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Jim Faliveno/Monumental Computer App.	Cherry Valley ,NY
Mike James - Multimedia Software	Mount Airy ,MD
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Ed Aborn	Tampa ,FL
National Semiconductor Corporation	Santa Clara ,CA
Dept. of Navy / Bill Walsh	Washinton, D.C. ,.
Nat. Institute for Standards/Technology	Boulder ,CO
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BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - JUNE 1990

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Popular Mechanics Online BBS	(212)582-8369	. Automotive, Home/Shop, Electronics/Photography, Science	Popular Mechanics Magazine	New York ,NY
ProComm Support BBS	(314)474-8477	. Home of ProComm 2.4.2 and ProComm Plus Comm Prgrms	Thomas Smith/DataStorm Technologies Inc.	Columbia ,MO
Public Brand Software BBS	(317)856-2087	. Commercial Shareware Vendor	Public Brand Software	Indianapolis ,IN
Publishers Information Svce.	(312)342-6919	. Xerox Ventura Publisher Support/Laser Printing/Scanning	George Weiners	Chicago ,IL
Radio Electronics BBS	(516)293-2283	. Radio Electronics Magazine Online Adjunct.	Gernsback Publications	Farmingdale ,NY
Random Access Information Svc.	(503)761-8100	. 10500 IBM/MAC/AMIGA Files - 3000 MaxiPic Graphics	Janice Stevens	Portland ,OR
RGB Computing	(519)824-3997	. Multiline Information Service/PC Sales/Large File Selection.	Ronald Spencer - RGB Computing	Guelph ,Ontario
Rose Media	(416)733-2780	. Excellent Canadian PC Board System-Publications/Conferences	Vic Kass	Willowdale ,Ontario
Salt Air BBS	(801)261-8976	. Home of PCBoard BBS Software - National List of PCB Sys	Clark Development Company/David Terry	Murray ,UT
Science Resource Studies BBS	(202)634-1764	. Federal R&D Budget - Technical Labor Market Statistics	National Science Foundation	Washington ,D.C.
Scooters Scientific Exchange	(215)657-5586	. Biotechnology/Chemistry/Physics/Astronomy/Space Sciences	Brian Moldover	Willow Grove ,PA
SEAboard!	(201)473-1991	. Support system for ARC, SEADOG, and AXE software.	System Enhancement Associates	Wayne ,NJ
Second Ring, The	(203)268-5315	. Home of RBBS Software	Tom Mack	Trunbull ,CT
Sistema Profesional Informacion	525 590-5988	. . Largest BBS in Mexico - Spanish Language TBBS	Tecnologia Uno Cero S.A. de C.V.	Mexico City ,
Society for Technical Comm. BBS	(202)393-3557	. STC Job Service, Freelance Registry - Technical Writers	Society for Technical Communication	Washington ,D.C.
Sound Advice BBS	(816)436-4516	. Twenty Line PCBoard with 2 Gigabytes Storage - HST Modems	Roy Timberman	Gladstone ,MO
State and Local Emergency Mgmt.	(202)646-2887	. Hazardous Materials/National Dam Watch/Emergency Info	Federal Emergency Management Agency	Washington ,D.C.
Synergy	(617)769-5468	. Turbo Basic/Turbo C/Quick C/Turbo Pascal/Assembly Language	Gerry Powers/Jim Boxmeyer	Norwood ,MA
Take 3 BBS	(602)482-1001	. Reviews of Movies/Videos/ Film Industry Job Clearinghouse	Dave Kidder	Scottsdale ,AZ
Talk Channel	(818)506-0620	. DLX-Based Multiline Chat/Talk Service - Sexual Orientation	Gary Clarkson	North Hollywood ,CA
TAXACOM	(716)896-7581	. Botany, Herbaria, FLORA ONLINE Newsletter, Latin Translation	Clinton Herbarium, Buffalo Museum	Buffalo ,NY
Taxonomic Reference File	(215)972-6759	. Online Bacterial Name Database - ORACLE Door	BIOSIS Carol Lock/Keith Pittman	Philadelphia ,PA
TBBS Net 104/23	(303)699-9248	. Home of The Bread Board System (TBBS) BBS Software	Phil Becker/eSoft Inc.	Aurora ,CO
Telegodzilla	(503)621-3746	. Home of ZModem File Transfer Protocol/YModem/YAM	Chuck Forsberg/Omen Technology Incorp.	Portland ,OR
Telix Support BBS	(416)439-8293	. Support Service for Telix Communications Software	Colin Sampaleanu/Exis Incorporated	West Hill ,Ontario
Texas State Law Library BBS	(512)463-1371	. Online Legal Periodicals and Citation Database		Austin ,TX
The Business BBS	(213)477-0408	. Microsoft Windows Support	Jim Appleby	Los Angeles ,CA
The Ledge PCBoard	(818)352-3620	. Home of Textview Door for PCBoard Systems	Joseph Shepparc	Tujunga ,CA
The LiveWire BBS	(609)866-2551	. Online Magazine Subscription Orders/BBS Callers Digest	Richard Paquette	Mt. Laurel ,NJ
The Well	(415)332-7190	. Unix Conferencing System - $8 monthly plus $3 hourly	Whole Earth Lectronic Link	Sausalito ,CA
Thomas Business Systems	(407)395-7057	. Used Computer/Peripheral Price List Online Database	Phil Thomas/Thomas Business Systems	Boca Raton ,FL
TOPS Support BBS	(415)769-8874	. Application Notes, Product Descriptions for TOPS LAN	Sun MicroSystems	Alameda ,CA
TurboTax Support BBS	(619)453-5232	. Income tax information - Turbotax 1040 program support	Chipsoft Inc.	San Diego ,CA
U.S. Robotics - Sit UEU Sit	(708)982-5092	. Support for US Robotics HST 9600 bps Modems	U.S. Robotics Corporation	Skokie ,IL
United Nations BBS	(201)795-0733	. UN Press Releases - Unitex News - Unicef	Dr. James Waldron	Hoboken ,NJ
US Naval Observatory BBS	(202)653-1079	. Time - Date - Sunrise - Sunset - Enter @TCO for Commands	US Department of Commerce US Naval Obser	Washington ,D.C.
USA Today Distribution Service	(303)973-4222	. Distribution Service for USA Today/Newsbytes/Boardwatch	Boardwatch Magazine	Littleton ,CO
USA/GDR Databank	(202)529-0140	. News from East Germany, Rumania, USSR, Czechoslovakia	Council on USA/German Democratic Repub.	Washington ,D.C.
USGS Quick Epicenter Determin.	(800)358-2663	. Earthquake Epicenter Data - Geomagnetism7E2	US Geological Survey Earthquake Info Cnt	Denver ,CO
USNO Time of Day for Clocks	(202)653-0351	. Xmits ASCII Time String - Sync Your PC to USNO Atomic Clock	US Dept. of Commerce US Naval Observ.	Washington ,D.C.
UT Library Online Catalog	(512)471-9420	. Online Library Card Catalog Listing 3.5 million entries	University of Texas at Austin	Austin ,TX
VA Property Listing BBS	(602)640-2371	. List of VA held property foreclosures	Veterans Admin - Phoenix Regional Office	Phoenix ,AZ
Vacation Florida Database	(407)839-0333	. Florida Tourism Information/Database of Campsites/Hotels	Richard and Barbara Kenney	Orlando ,FL
Vancouver ED-NET	(604)734-3282	. Educational Online Service	Vancouver Board of Education	Vancouver ,BC
Ward and Randy's CBBS	(312)545-8086	. World's First and Oldest Micro-based BBS - Since 2/16/78	Ward Christensen/Randy Suess	Chicago ,IL
WeatherBank	(800)827-2727	. Online Weather Forecasts for Any City - Download Radar Data	Steve Root/WeatherBrief Data Services	Salt Lake City ,UT
WeatherStar Pilot Briefing	(612)296-5426	. Pilot Data, Weather, Great Circle Route, Airport Information	Haynes Environmental Systems	Minneapolis ,MN
Western Digital Tech Support	(714)756-8176	. Hard Drive/Controller Installation and Config Data	Western Digital Corporation	,
XyQuest Support BBS	(508)667-5669	. Support for XyWrite Word Processor - Custom Keyboard Files	XyQuest Inc. - Christine Madsen	Bellerica ,MA
Ye Olde Bailey	(713)520-1569	. Legal Issues Regarding RBOC Relations with Info Services	Reginald Hirsch; Attorney	Houston ,TX
Zenith Technical Support BBS	(800)888-3058	. Technical Support for Zenith Desktop and Laptop Units	Zenith Data Systems Customer Service	Chicago ,IL

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LIST OF AREA CODE 303 ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - JUNE 1990

TITLE	PHONE	DESCRIPTION	TYPE	MODEM	SOFT	CITY	OPERATOR
Adelante 104/93	443-8292	Central/Latin America News/Issues	IBM	2400	Opus	Boulder	Zhahai Stewart
APSNet	693-6737	Aurora Public Schools Network	Apple	2400	GBBS	Aurora	Columbia Middle School
Arvada 68K BBS	424-9831	Amiga/Macintosh/Atari ST/Motorola 68000	Amiga	2400	BBS-PC	Denver	Reid Bishop
Boardwatch Magazine 104/555	973-4222	Back Issue Index, Dialing Directories	IBM	2400	TBBS	Littleton	Jack Rickard
Boulder Amiga Users Group	494-4470	Amiga Support - Over 1000 Amiga Files	IBM	2400	QuickBBS	Boulder	Ken Fricklas
Byte Shop 104/311	794-5065	Jokes/Good Echomail/Downloads	IBM	96HST	QuickBBS	Littleton	Dan O'neal
C.A.C.H.E	745-4960	CO Apple & Compatible Home Enthusiasts	Apple	2400	GBBS	Denver	Gary Edwards
C.A.R.L.	863-1350	Colorado Alliance of Research Libraries	Tandem	2400	Custom	Denver	C.A.R.L.
C.D. Players	825-0419	Computer Discount On-line Store/Amiga	Amiga	2400	TBBS	Denver	Jay Tompkins
Chatfield Armory	972-9023	Firearms for Sale/Trade - Online Games	IBM	2400	QuickBBS	Littleton	Dave Bell
Chidvilas 104/207	449-7399	Bhagwan Shree Rajneesh followers	IBM	96PEP	Opus	Louisville	Terry Mooster
Christian Connection 104/516	337-5737	Bible Lessons, Sermons, Counseling	IBM	2400	QuickBBS	Aurora	Shirley Pope
Circuit Board, The 104/117	666-0302	Electronic Professionals and Enthusiasts	IBM	96HST	QuickBBS	Lafayette	Jack Dean/Kevin Vaden
CO State Judicial BBS 104/420	831-1704	Colorado State Judicial ADP Department	IBM	2400	QuickBBS	Denver	Scott V. Hopta
Coco County Airport 104/322	761-3097	TRS Color Computer Support	CoCo	2400	RiBBS	Aurora	Paul Sweat
College Board, The	979-7299	Red Rocks College Bulletins/Schedules	IBM	1200	TOS	Littleton	Tom Nielson
Colorado Broadcasters 104/42	341-0129	Commercial Radio Frequency Lists	IBM	1200	Opus	Aurora	Jeff Brothers
Comm-Post, The 104/666	534-4646	Astronomy -725+MB of Files - Multiline	IBM	96HSTV32	TBBS	Denver	Brian Bartee
Comnet BBS	972-8341	Support in Different Computer Topics	IBM	2400	QuickBBS	Littleton	Dave Lange
Computer Care BBS 104/41	771-8107	PC Magazine/Tech Journal Files	IBM	2400	Opus	Littleton	John Bilbro
Control Systems 104/417	458-6248	IBM/Compatibles Subscription Board	IBM	96MICROC	RBBS	Denver	Lupe Ramiriz
CP/M SIG INC 104/372	465-1313	Oldest User's Group in Area - CP/M - IBM	IBM	2400	Fido	Broomfield	Al Lundquist
Craig's Place	288-1463	PC Nationals Drag Racing/Chess/Games	IBM	2400		Denver	Craig Steele
Crypt, The	696-9084	Adult Messages and Activities	IBM	2400	WWIV	Denver	Bill Bonic
D-Link 1 104/411	936-2791	Golden Micro Computer Sales/Support	IBM	96HST	QuickBBS	Denver	Bob Wells
Dark Crystal, The 104/421	654-1278	Role Playing Games	IBM	2400	QuickBBS	Denver	Steve Boyd
Dementia	986-9610	American MENSA Denver Chapter	Apple	96HST	GBBS	Lakewood	Chuck Pelto
Denver Area R:BASE Users Group	422-2149	R:BASE Information PC Related Files	IBM	2400	QuickBBS	Lakewood	Paul Fullerton
Denver Deaf-Net	989-9245	Hearing Impaired/Computing	IBM	2400	QuickBBS	Lakewood	David Sheneman
Dinosaur Board 104/114	1-652-3595	TRS80 Support/16 Online Adventure Games	IBM	96HSTV32	TBBS	Niwot	Chris Anderson
Discordian Society	933-3472	Disagreeable Conversation		2400			Steven Crandall
Dragonfriends Place 104/11	782-9547	Wicca/Astrology/Tarot/Pagan Interests	IBM	2400	Opus	Denver	Russ Anderson
Eagle's Nest 104/315	933-0701	Many Files and Echoes	IBM	9600	QuickBBS	Littleton	Ronald Olsen
Emerald City BBS 104/214	427-1471	Electronics Discount World	IBM	2400	QuickBBS	Westminster	Daniel Osborn
Enterprise	377-1005	Local Radio Freq List - Star Trek Theme	Apple	2400	Protree	Denver	Jeff Tensly
eSoft TBBS Software Support	699-9248	The Bread Board System-LOGON:ANSI DEMO	IBM	96HST	TBBS	Aurora	Phil Becker
Fantasy Mountain 104/809	278-8369	Deaf and Handicapped Issues ASCII TTY	IBM	2400	QuickBBS	Golden	Steve Shockley
Four Wheeling BBS, The	469-4954	Jeeping / Camping / Outdoors	Atari	2400	STadel	Broomfield	John Ferguson
Fred's BBS	233-1316	Over 1300 Adult Files	IBM	2400	QuickBBS	Lakewood	Fred Schupner
Free Information Exch. 104/89	699-1516	Programming - Home and Garden	IBM	2400	Opus	Denver	Charles Frnka
Front Range BBS 104/213	465-5447	Front Range Software Services	IBM	2400	QuickBBS	Broomfield	Gary Jones
Front Range PC Users Group BBS	1-493-4094	Fort Collins Group - Computer Express	IBM	2400	Wildcat	Fort Collins	Tom Oppenheimer
FutureWave BBS 104/57	440-7425	Games / C Language / MIDI	IBM	2400	Opus	Boulder	
Galaxy Express 999 104/215	469-3221	Japanese Cartoon Animation-Messages	IBM	2400	QuickBBS	Broomfield	Bruce Arnold
Gay Community Fido 104/19	795-1215	Messages / Downloads for Homosexuals	IBM	1200	QuickBBS	Littleton	Witheld by Request
GDP Technologies BBS	673-9470	Outstanding IBM Shareware/Programming	IBM	2400	Wildcat	Lafayette	Tom Gettys
Grotto, The	694-9050	Amiga, Pascal - Ebert Personal Computers	IBM	2400	TBBS	Aurora	Vincent Veritas
Home BBS, The 104/419	428-1185	Recipes/Cooking Theme	IBM	2400	QuickBBS	Denver	Richard Harper
HP Haven 104/312	671-5976	Tradewars/On-line Games/ 5PM-7:30 AM	IBM	96HST	QuickBBS	Westminster	Mark Willecke
JEFFCOM BBS	273-6951	Jefferson County Public Schools	IBM	1200	RBBS	Golden	Ron Dries
King's Market Bookshop 104/115	665-6091	Books, Writers, On-line Adventure Games	IBM	2400	TBBS	Boulder	Jim Burt
L&L Support	420-3568	Primary GBBS Pro Software Support BBS	Apple	2400	GBBS	Arvada	Lance Taylor-Warren
Lakewood Department of Safety	987-7388	Police Sponsored - Law Enforcement Msgs	IBM	1200	RBBS	Wheatridge	Larry Scheiderman
LaserWriting Desktop Service	741-4122	Laser Printing/Scanning/Linotronic 300	MAC	1200	RedRyder	Denver	Bill Wright

LDS Reading Room, The 104/513	343-1665	Latter Day Saints - The Mormons	IBM	2400	QuickBBS	Aurora	Don Bell
Lensman, The	979-8953	Science Fiction/Fantasy Fandom News/Info	IBM	2400	GT Power	Littleton	Greg Bradt
LES-COM-net	526-2046	Lesley College Comm Net - GBBS Multiline	Apple	2400	GBBS	Genesee	George Willett
Lodge, The 104/212	420-0305	Arvada Quick BBS Board	IBM	2400	QuickBBS	Arvada	Harold "Monty" Montrose
Love Boat BBS 104/217	431-6832	Adult Ads/Messages - Online Games	IBM	2400	QuickBBS	Arvada	
MACE 104/416	797-8090	MS-DOS User Group - Many Files/Echoes	IBM	2400	QuickBBS	Denver	Kevin Payne
Master Control 104/325	949-3253	Radio Broadcast Engineers/Technicians	IBM	Hayes96	Opus	Denver	Lynn Osburn
Max Manlove's BBS	863-8110	Gay and Lesbian Issues and Discussion	IBM	2400	RBBS-PC	Denver	Max Manlove (pseudo)
MICRO	752-2943	Mile High Computer Resource Organization	IBM	2400	QuickBBS	Westminster	Jim Kochmann
Microlink B 104/108	972-9600	1 Gigabyte Files - USA Today - Multiline	IBM	96HSTV32	TBBS	Littleton	Girard Westerberg
Microlink D 104/711	237-8575	Over 200 MB - Doesn't Break	IBM	96HST	TBBS	Lakewood	???
Microlink Minus Two 104/204	753-9710	Professional Comp. Sales Inc./Astronomy	IBM	2400	TBBS	Denver	Paul Smith
Middle Earth BBS	341-9521	Chess/Scrabble/Startrek/Barons	IBM	2400	QuickBBS	Denver	Christopher Millensifer
Midrash 104/18	289-6864	Messianic Judaism - Religious/Philosophy	IBM	96HST	QuickBBS	Denver	Daniel Segard
Mile High BBS	733-1340	Triathalons - Race Schedules - Fitness	IBM	2400	RBBS	Denver	Bill Ankele
Mile High Mac Meet	758-9159	Denver Macintosh Users Group	MAC	96HST	WWIV	Denver	Jon Taylor
Mile High Net	671-7308	Fido Board	IBM	2400	Fido	Aurora	Dave Miller
Mohave Net Gateway 104/62	426-0623	Science Fiction/Medical Echo	IBM	96HST	QuickBBS	Denver	Claude Warren
Monkey Boy BBS 104/43	469-7161	Smileware Software	IBM	2400	Opus	Broomfield	Todd Hill
Mountain Man TI	797-6783	Denver TI Users Group - Texas Instrument	TI	2400	Tigger	Littleton	Roy Bartee
NBS Automated Computer Time	494-4775	ACTS - Sync PC Clock to NBS Atomic Clock	Custom	1200	Custom	Boulder	Natl. Bureau of Standards
NetComm BBS	730-6709	Weather - Online Games - 330 MB	IBM	2400	GT Power	Littleton	Bill Watts
New Age Bulletin Board, The	366-1106	Health, Ecology, Philosophy	IBM	1200	TBBS	Aurora	Hal/Fran Piser
NightFlyer 104/210	467-9199	Basic/dBase/Assembler/C Programming	IBM	2400	QuickBBS	Arvada	Marcel Madonna
Nurse Link 104/52	270-4936	UCHSC School of Nursing	IBM	2400	TBBS	Littleton	Larry McNeill
OKY BBS 104/113	494-0533	Armenian Electronics Consultant	IBM	2400	QuickBBS	Boulder	Onnig Kouyoumdjian
On-Line Consulting 104/45	449-5251	Consultant Directory/Desktop Publishing	IBM	2400	Opus	Estes Park	Lee Lasson
On-Line Shopping Service	442-5125	Boulder Home Grocery Delivery $5 +5%	IBM	1200	Chairman	Boulder	Pete Dempsey
PCIS 104/904	789-4610	PC Info Services - List of User Groups	IBM	2400	Opus	Englewood	Phil Kaiser
Pentax Support	460-1637	CD WORM/Flatbed Scanner/Fanfold Laser	IBM	1200	TBBS	Broomfield	Chris Anderson
Pinecliffe 104/28	444-7073	170 Meg - Online Order for CDB Systems	IBM	96HST	Opus	Boulder	Craig Baker
Pink Flamingo 104/607	497-3934	Previousely Fido NBS	IBM	2400	QuickBBS	Boulder	Cathy Nicolleti
Professional System, The	740-2223	Writers, Lawyers, EDP Auditors	IBM	1200	TBBS	Littleton	Bob Voorhees
Quick Epicenter Determination	279-6374	USGS Earthquake Data 7E2	VAX	300 7E2	????	????	Bruce Presgrave
R.A.B.B.I.T.	757-9509	Colorado Highway Department - Planning	IBM	1200	TBBS	Denver	Colorado Dept. Highways
Ready Room, The 104/424	329-8136	Star Trek Theme - USS Tutakai NCC-1799-B	IBM	2400	QuickBBS	Denver	Jason Steck
Realtime Control & Forth Board	278-0364	Vesta Technology/Denver Forth Int. Group	IBM	2400	PCBoard	Wheatridge	Jack Woehr
Regency Datasource 104/58	972-1222	Private Computer Consulting Support	IBM	96Hayes	Opus	Littleton	Charlie Bass
RIBBS Support Hdqrtrs. 104/54	343-6707	Support for CoCo RIBBS Software	IBM	2400	QuickBBS	Aurora	Ron Bihler
Ron and Shannons BBS	978-0298	Atari Support 5.4 MB XE 130	Atari	2400	OASIS	Englewood	Ron/Shannon Sellers
Short Line 104/36	778-7312	Varied Topics, Fidonet, BinkleyTerm	IBM	96HSTV32	TBBS	Denver	Alan Applegate
SnarfQuest V 104/317	973-0625	The Tower	IBM	2400	QuickBBS	Littleton	Radford Walker
SnarfQuest]I[104/46	761-1634	The Arena On-line Games, Fantasy, AD&D	IBM	96HST	QuickBBS	Englewood	Dax Davis
Sound Doctrine BBS 104/514	680-7209	Christian BBS / Sound Doctrine Church	IBM	2400	TBBS	Aurora	Tim Williams
Space Environment Service Cntr	497-5000	NCAA Solar Flare Forecast / Advisory	IBM	1200	PBBS	Boulder	US Dept of Commerce
Space Network	494-8446	Space Exploration Information	IBM	2400	TBBS	Boulder	Tom Meyer
Steamboat Information	1-879-6741	Info on Steamboat Springs Area	IBM	1200	TBBS	Steamboat Springs	???
Stonewall 104/112	499-2676	Online Games/Graphics 120 MB	IBM	96HST	QuickBBS	Boulder	Mike Reetz
TBBS Net 104/23	699-9248	T)he B)read B)oard S)ystem Support	IBM	2400	TBBS	Aurora	Phil Becker/eSoft Inc.
The 8th Sea 104/610	252-9235	Fidonet 104 Net Coordinator	IBM	2400	QuickBBS	Northglenn	Rod Lamping
The Oak Tree	431-7522	A meeting/conversation place for women.	IBM	1200	RBBS-PC	Arvada	Denise Beahm
This End Up 104/30	429-2445	Messages - files	IBM	2400	Opus	Westminster	Steve Carnes
Translations Unlimited	988-5765	Language Translation 6PM-6AM	IBM	2400	Minihost	Lakewood	Jon Johnson
U.S.S. Liberty 104/432	757-6197	Naval Them CVN 6809	Coco	2400	RIBBS	Glendale	Stan Wagner
Vet Set, The	690-3218	Veterans Issues	IBM	2400	GAP	Aurora	Alfred Petersen
Watchdesk, The 104/66	450-0822	Safety - Arson - Hazardous Material	IBM	96HST	QuickBBS	Thornton	Emit Hurdelbrink
Weyr, The 104/211	429-2975	Good Collection of Game Software	IBM	96HST	Opus	Westminster	Ken Shimko
Wizardry 104/630	670-1416	210 MB Files Online Games Echomail	IBM	96HST	QuickBBS	Evergreen	Mark Cook
World Peace BBS 104/415	320-4822	Current Events, Politics, Religion	IBM	2400	QuickBBS	Denver	Bucky Carr

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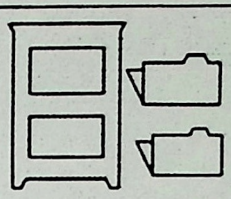

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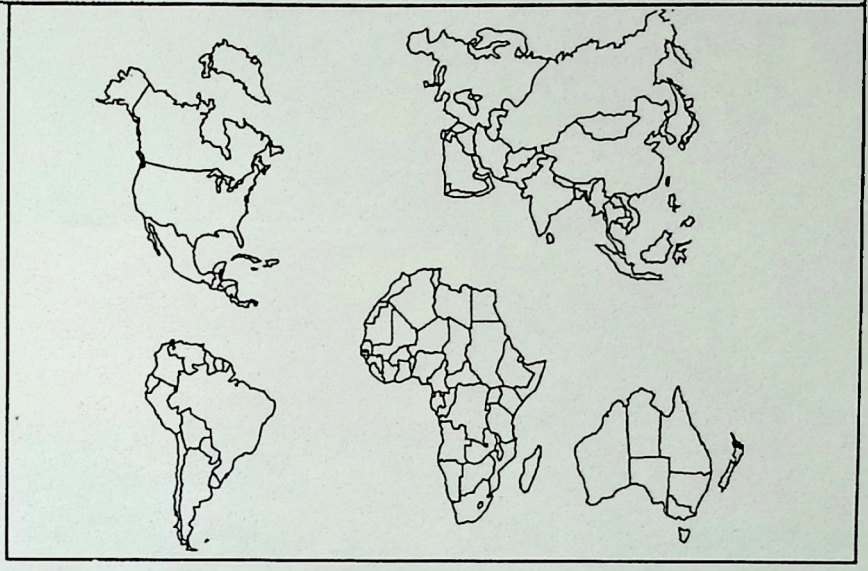

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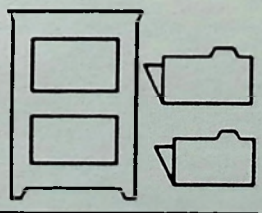

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